

## Parent's Guide

# Math



## ID Card

Student name : .....

School name : .....

Class : .....

Phone number: .....

# Preface

- We introduce this book to our colleagues, our teachers and our students to help them study mathematics.
- This book is the outcome of more than forty years of experience in the field of teaching mathematics.  
This book will make students aware of all types of questions.

## **This release is the first of it's kind we have sponsored**

- Interesting material for mathematics in line with the requirements of this stage.
- The use of the Egyptian Knowledge Bank.
- Appropriate content for the student's age range.
- Observe individual differences among students.
- Many activities and exercises that attract pupils.

The Authors

God grants success

## Meaning of some concepts in Teacher guide

- The general aims :
  - ( 1 ) Gain the earlier mathematical abilities.
  - ( 2 ) Develop the basic mathematical skills.
  - ( 3 ) Increase the mathematical enjoyment.
- Maths pamphlet ( Student book ) :

is a good resource for students evaluation.
- The content : is what students discovering or learning it.
- The evaluation : is what teacher discovering it about pupils.
- Update of ideas : change the ways continuously that adapt to different ability of pupils.
- Planning : is what helping for achieve more success in processing operation.
- Correction maths : by this activity the student can develop their knowledge about numbers, place value concepts, fluently counting and problems solving skills.
- Sharing : by this activity the student can explain what he understand of maths
- Using digital resources that is found in ( Egyptian knowledge bank )

**as a way to grow the education level**



Egyptian Knowledge Bank  
بنك المعرفة المصري

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**Soon**

**Ask about .....**

**The second part**

- ✿ Explanation of the rest of the curriculum.
- ✿ Assessments on the curriculum.
- ✿ Complete answers to the book.

# Times table

×	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3		9	12	15	18	21	24	27	30	33	36
4			16	20	24	28	32	36	40	44	48
5				25	30	35	40	45	50	55	60
6					36	42	48	54	60	66	72
7						49	56	63	70	77	84
8							64	72	80	88	96
9								81	90	99	108
10									100	110	120
11										121	132
12											144

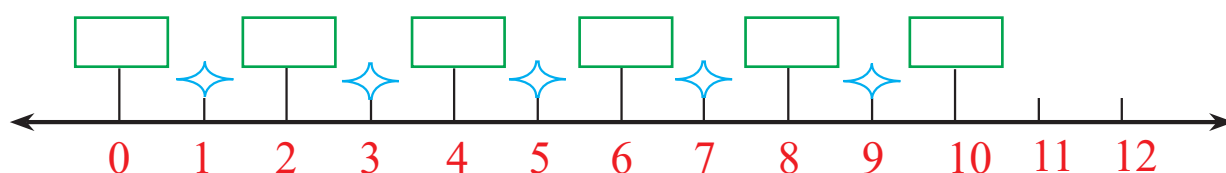
×	10	100	1000
1	10	100	1000
2	20	200	2000
3	30	300	3000

×	1		
number	the same		

×	0		
number	zero		

## Even and odd numbers

1 Note the following :



  The numbers 0, 2, 4, 6, 8, ..... are called even numbers ,  
and every number it's unit digit even is even number .  
**Examples** : 942 , 314 , 158 , 530 , 1376 , ..... and so on

☆ The numbers 1 , 3 , 5 , 7 , 9 , ..... are called even numbers  
and every number it's unit digit odd is odd number .  
**Examples** : 751 , 423 , 605 , 2007 , 6409 , .....

2 Note the following :

- (a) The even numbers between 15 , 30 is .....
- (b) The even number that just before the number 165 is .....
- (c) The odd numbers between 30 , 41 is .....
- (d) Any even number + 2 = ..... number
- (e) The odd number just after the number 569 is .....

3 Note the following :

- (a) Two consecutive even numbers whose sum is 22 are ..... , .....
- (b) Two odd numbers, the difference between them is 4 are ..... , .....
- (c) Two numbers ,the greatest is even and the second is odd, and the difference between them 5 are..... , .....
- (d) Two numbers, one even and the other odd, have a sum of 15  
..... , .....

4 Write two numbers as the following

- (a) Two equal odd numbers their sum of 70 ( ..... , ..... )
- (b) Two different odd numbers their sum 80 ( ..... , ..... )
- (c) Two equal even numbers their sum 80 ( ..... , ..... )
- (d) Two different even numbers their sum 32 ( ..... , ..... )
- (e) Two consecutive even numbers their sum 82 ( ..... , ..... )

5 Complete the following :

- (a) 5 Consecutive even numbers the smallest number is 10

The solution : The numbers are ..... , ..... , ..... , ..... , .....

- (b) 5 Consecutive odd numbers the greatest number is 21

The solution : The numbers are ..... , ..... , ..... , ..... , .....

## Numbers

### learn

From our previous study, we learned the following :

- |                                     |                                   |
|-------------------------------------|-----------------------------------|
| ☀ Smallest single-digit number = 0  | Greatest single-digit number = 9  |
| ☀ Smallest 2-digit number = 10      | Greatest 2-digit number = 99      |
| ☀ Smallest 3-digit number = 100     | Greatest 3-digit number = 999     |
| ☀ Smallest 4-digit number = 1 000   | Greatest 4-digit number = 9 999   |
| ☀ Smallest 5-digit number = 10 000  | Greatest 5-digit number = 99 999  |
| ☀ Smallest 6-digit number = 100 000 | Greatest 6-digit number = 999 999 |

### Example

The number : **372 915**

- |   |                                  |
|---|----------------------------------|
| ☀ The place value of the digit <b>7</b> is <b>tens</b>              | and it's value is <b>70</b>      |
| ☀ The place value of the digit <b>5</b> is <b>thousands</b>         | and it's value is <b>5 000</b>   |
| ☀ The place value of the digit <b>1</b> is <b>ten thousands</b>     | and it's value is <b>10 000</b>  |
| ☀ The place value of the digit <b>9</b> is <b>hundred thousands</b> | and it's value is <b>900 000</b> |

\* Note then complete as the **Ex** :

The number	The digit ( 6 )		The digit ( 1 )	
	The value	The place value	The value	The place value
<b>Ex</b> 10625	600	Hundreds	10000	Ten thousands
379016	.....	.....	.....	.....
463801	.....	.....	.....	.....
601720	.....	.....	.....	.....
189653	.....	.....	.....	.....

## Revision

## Revision

### Reading numbers

#### learn

From our previous study how to read the numbers :

☀ 4 **reads as** four

☀ 39 **reads as** Thirty nine

☀ 112 **reads as** one hundred and twelve

☀ 901 **reads as** Nine hundreds and one

☀ 7625  $\left\{ \begin{array}{l} \text{groups as } 7 \end{array} \right.$  625 **reads as** 7 thousands ,six hundreds twenty five

☀ 425072  $\left\{ \begin{array}{l} \text{groups as } 425 \end{array} \right.$  072 **reads as** 425 thousands seventy two

☀ 674108  $\left\{ \begin{array}{l} \text{groups as } 674 \end{array} \right.$  108 **reads as** 674 thousands one hundred eight

Are you notice what we do ?

Spilt the number into groups from left to right, each group consisting of three digits .Then read this number from left to right.

\*

Complete the following :

The number

The number as groups

The number in word

304050

.....

**reads as** .....

670145

.....

**reads as** .....

800009

.....

**reads as** .....

615 724

.....

**reads as** .....

138 925

.....

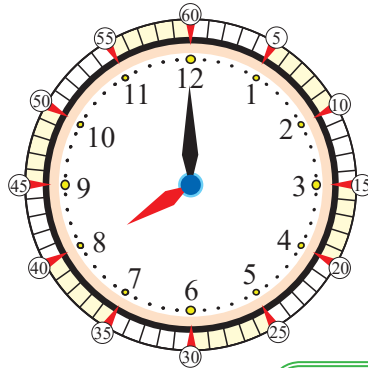
**reads as** .....

## The time

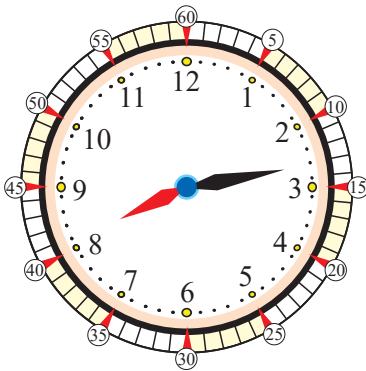
\* Note the reading of the time :

1 day = 24 hours

1 hour = 60 minutes

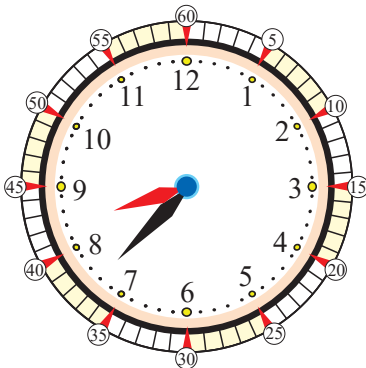
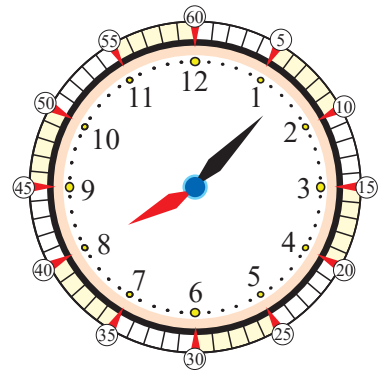


8 : 00



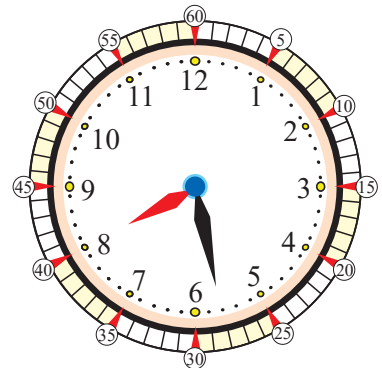
8 : 14

8 : 07



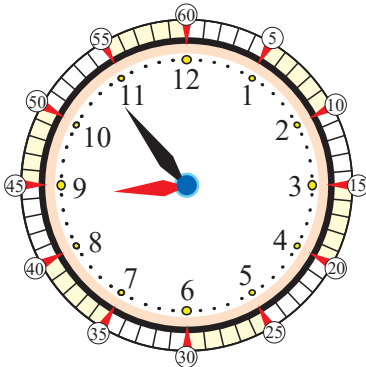
..... : .....

..... : .....



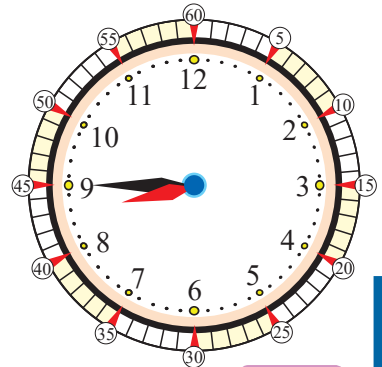
..... : .....

..... : .....






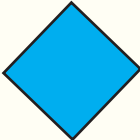

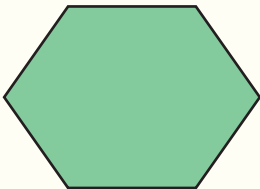
..... : .....

..... : .....





Complete the table of shapes (**two-dimensional**) and their properties :

Figure	Name	The property			
		The property of Sides	No. sides	The property of angles	No. vertices
	.....	Equal in length	.....	Equal	.....
	.....	2 short and 2 long	.....	.....	.....
	.....	2 parallel & 2 not parallel	.....	Not Equal	.....
	.....	Equal in length	.....	.....	.....
	.....	Each 2 opposite sides are parallel & equal	.....	.....	.....
	Regular Hexagon	Equal	.....	.....	.....

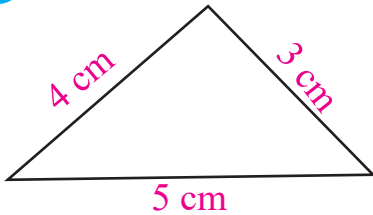


## The perimeter

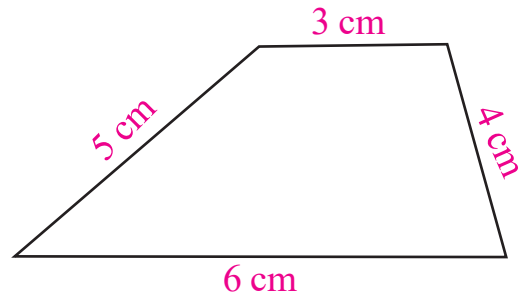
**The perimeter of any polygon = the sum of length of it's side**

1 Find the perimeter of the following as the Ex :

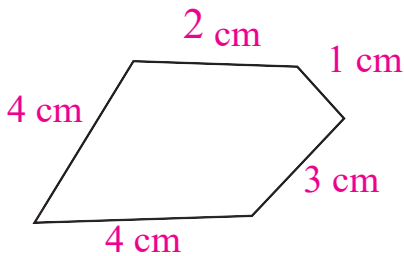
Ex



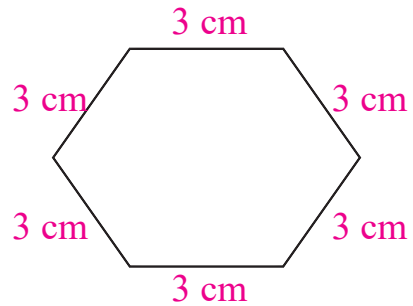
$$\begin{aligned}\text{The perimeter} &= 3 + 4 + 5 \\ &= 12 \text{ cm}\end{aligned}$$



$$\begin{aligned}\text{The perimeter} &= \dots + \dots \\ &+ \dots + \dots = \dots \text{ cm}\end{aligned}$$

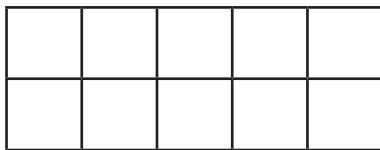


$$\begin{aligned}\text{The perimeter} &= \dots + \dots + \dots \\ &+ \dots + \dots = \dots \text{ cm}\end{aligned}$$

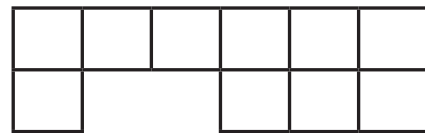


$$\text{The perimeter} = \dots \text{ cm}$$

2 Find the perimeter of the following:



$$\text{The perimeter} = \dots \text{ unit length}$$



$$\text{The perimeter} = \dots \text{ unit length}$$

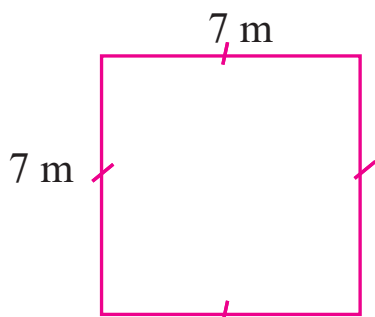
## Revision

## Revision

**Perimeter of a square** = side length  $\times$  4

**Side length** = the perimeter  $\div$  4

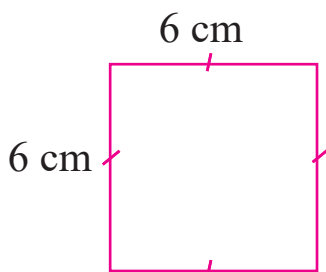
- 1 Find the perimeter of the following squares :



The perimeter

= ....  $\times$  ....

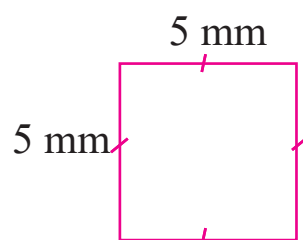
= .... m



The perimeter

= ....  $\times$  ....

= .... cm



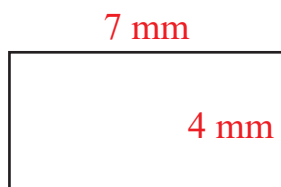
The perimeter

= ....  $\times$  ....

= .... mm

**Perimeter of a rectangle** = ( length + width )  $\times$  2

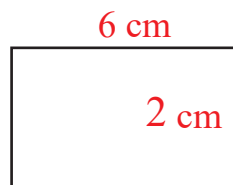
- 2 Find the perimeter of the following rectangles :



The perimeter =

( ..... + ..... )  $\times$  2

= ..... mm



The perimeter =

( ..... + ..... )  $\times$  2

= ..... cm

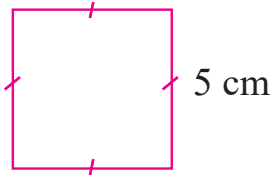
The length of the rectangle = half the perimeter of the rectangle - width of the rectangle

The width of the rectangle = half the perimeter of the rectangle - length of the rectangle

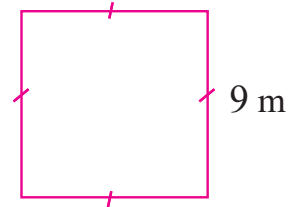
## Area

Area of a square = **side length**  $\times$  **it self**

1 Find the area of the following :



The area =  $5 \times 5$   
 =  $25 \text{ cm}^2$  ( **square centimetre** )



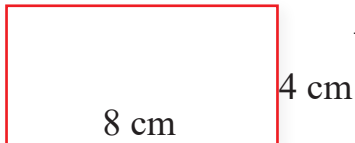
The area =  $9 \times 9$   
 =  $81 \text{ m}^2$  ( **square metre** )

Area of a rectangle = **length**  $\times$  **width**

length of rectangle = **it's area**  $\div$  **it's width**

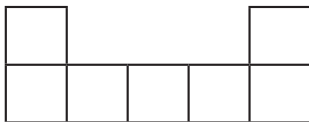
width of rectangle = **it's area**  $\div$  **it's length**

2 Find the area of the following :

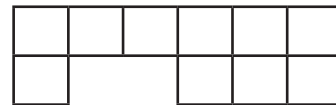


Area of a rectangle =  $8 \times 4$   
 =  $32 \text{ cm}^2$  ( **square centimetre** )

3 Find the area of the following :

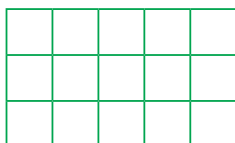


The area = ..... square units

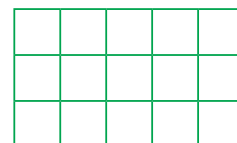


The area = ..... square units

4 Shade two rectangles with perimeter 10 m and with different area:



The area = ..... square units



The area = ..... square units

# Place value

## Unit One



Area	مساحة	Hill	تل
Aircraft	طائرات	Key	مفتاح
Bar graph	تمثيل بياني	Length	طول
Beans	فول	Less than	أقل من
Birthday	يوم ميلاد	Most	الأكثر
Composed	تجميع	Numeral form	الصيغة العددية
Categories	تصنيف	Order	ترتيب
Colony	مستعمرة	Parallel	يوازي
Column	عمود	Pupil	تلميذ
Convert	يحول	Quantity	كمية
Compare	يقارن	Repetitions	تكرار
Decompose	يحلل	Rectangle	مستطيل
Dice	حجر نرد	Round	تقريب
Expand form	صيغة ممتدة	Side	ضلع
Estimation	تقدير	Square	مربع
Favourite	مفضل	Standard form	صيغة قياسية
Front-end	القيمة العليا	Smallest	أصغر
Graph	رسم	Width	عرض
Greater than	أكبر من	Word form	الصيغة اللفظية
Greatest	أكبر		

## Content

Exercise  
inspired from  
Math Journal

Exercise  
on lessons

Self-Check  
on the unit

# Digit , Numeral , number - Really Big numbers

## Activity 1 You know what :

the digits : 0 , 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9

### From it we find that:

✱ The smallest single-digit number = 0

The greatest single-digit number = 9

✱ The smallest 2-digit number = 10

The greatest 2-digit number = 99

✱ The smallest 3-digit number = 100

The greatest 3-digit number = 999

✱ The smallest 4-digit number = 1000

The greatest 4-digit number = 9 999

✱ The smallest 5-digit number = 10 000

The greatest 5-digit number = 99 999

✱ The smallest 6-digit number = 100000

The greatest 6-digit number = 999 999

is read as zero

is read as .....

is read as ten

is read as .....

is read as .....

is read as .....

is read as .....

is read as .....

is read as .....

is read as .....

is read as .....

is read as .....



## Numeral form

Digits

0 , 8 , 7

Numbers

A group of related digits

618 , 3102

Way to express a number

3 million six hundred thousands

417 , 12 , 0

# Unit 1

**Activity 2** Write each number in the suitable column :

983 , thirty seven , 9 , six , 0 , hundred , 23000540

Digit	Number	Numeral form
	0	983 - thirty seven
0	9	six - 0 - 9
9	983	hundred -
	23000540	23000540

**Practice 1** Write each number in the suitable column :

eighty four - **135** - seven - **6** - **60300** - ten - **7** - **29**

Digit	Number	Numeral form

**Practice 2** Circle all the numeral forms :

65 - bathroom - zero - X X - 1947 - ruler - twenty seven

**Practice 3** Create from the set of numbers **2 , 0 , 8 , 4 , 6** :

- (a) the greatest number is ..... is read as .....
- (b) the smallest number is ..... is read as .....

## Big numbers

### Activity 3 learn :

#### First Million

- ① The smallest 7-digit number is **million** written as **1 000 000**
- ② It is an even number because it is divisible by **2**.
- ③ The number just before it is the greatest 6-digit number **999 999**  
Where  $999\,999 + 1 = 1\,000\,000$  (**million**)
- ④ Represent the number **1 000 000** in the place value table.

**1 million** →

**10 millions** →

**100 millions** →

Millions			Thousands			Ones		
Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones
		1	0	0	0	0	0	0
	1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0

#### Second Milliard

- ① The smallest **10-digit** number is **1 000 000 000** writes as (milliard)
- ② It is an even number because it is divisible by **2**.
- ③ The number just before it is the greatest **9-digit** number **999 999 999**  
Where :  $999\,999\,999 + 1 = 1\,000\,000\,000$  read as ( **milliard** )
- ④ Represent the number **1 000 000 000** in the place value table.

**1 milliard** →

**10 milliards** →

**100milliards** →

Milliard			Millions			Thousands			Ones		
Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones
		1	0	0	0	0	0	0	0	0	0
	1	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0

# Unit 1

**Activity 2** Write the number on the place value card :

**The number :** 15 millions , 80 thousands (15080000)

Millions			Thousands			Ones		
Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
	1	5	0	8	0	0	0	
15 millions			80 thousands					

**Practice 4** Write the numbers on the place value card :

**a** **The number :** 153 millions , 8461 (153008461)

Millions			Thousands			Ones		
Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones

**b** **The number :** 7 Millions , 5 thousands (7005000000)

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
7 millions	5 thousands								

**c** **The number :** 1 Millions , 600 thousands (1000600000)

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
1 millions				600 thousands					



**Practice 5** In each numeral form , determine the digit as required :

234 568

- (a) Tens place is .....
- (b) Hundred thousands place is .....
- (c) Thousands place is .....

63 574 192

- (a) Ten thousands place is .....
- (b) Millions place is .....
- (c) Ten millions place is .....

**Practice 6** Use the following number and follow the instructions :

1 5 4 2 3 4 5 6 8 7 6

- (a) Underline the digit in the hundred-millions .
- (b) Draw a square around the digit in the Billions place .
- (c) Draw a circle around the digit in the hundreds place .

**Practice 7** From the digits 3, 5, 7, 8, 1, 6, 2 complete :

- (a) The greatest number is ..... value of 2 is .....
- (b) The smallest number is ..... value of 2 is .....

**Practice 8** Complete :

- (a) The greatest 6-digit number is .....  
And the number just after it is : .....
- (b) The smallest 6-digit number is .....  
And the number just before it is : .....

## Self-check on lesson (1, 2)

**1** Write the following numbers on the place value card :

**a** The number : **2 345 689**

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones

**b** The number : **35 891 455**

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones

**c** The number : **45 800**

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones

**d** The number : **2 300 120**

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones

**e** The number : **6 010 226 026**

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones

**2** Read the numbers then complete as in ( a )

- (a) 1 100 000 000 is read as One milliard and 100 millions
- (b) 9 050 500 000 is read as ..... millions..... thousands
- (c) 3 200 100 000 is read as ..... millions..... thousand ..... thousands
- (d) 4 300 500 700 is read as..... millions.....thousands  
and ..... Hundreds

**3** Use the number **9157346842** to complete the following :

- (a) The digit that in the hundreds place is .....
- (b) The digit that in the ten millions place is .....
- (c) The digit that in the millions place is .....
- (d) The digit that in the tens place is .....
- (e) The digit that in the hundred thousands place is .....

**4** Write each number in the suitable column :

Forty five - **85200** - nine - **654** - one - **4** - protractor

Digit	Number	Numeral form

# Unit 1

## 5 Complete as the Ex :

(a)  $\frac{1}{2}$  million = 500 thousands = 500 000

(b)  $\frac{1}{4}$  million = ..... = .....

(c)  $\frac{1}{3}$  million = ..... = .....

(d)  $\frac{1}{2}$  milliard = ..... = .....

(e)  $\frac{1}{4}$  milliard = ..... = .....

## 6 Choose the correct answer from the brackets :

(a) 7 milliards , 700 thousands = .....  
( 7007 000 000 , 7 000 700 000 , 700 700 000 )

(b) 9 milliards , 5 millions and 1 hundred = .....  
( 9005 000 100 , 9 000 005 100 , 9050 000 100 )

(c)  $\frac{3}{4}$  milliard = .....  
( 750 000 000 , 500 000 000 , 250 000 000 )

## 7 Answer the following :

(a) The smallest 7-digit number is .....  
And the number just before it is: .....

(b) The smallest different 4-digit number is .....  
And the number just after it is: .....

(c) The smallest 8-digit number is .....  
the number just before it is: .....  
And the number just after it is: .....

## Changing value and its compere

**Place value** It is the name of the place of the digit .

**Value** We write the digit and put zeros after it according to the number of digits that after it.

**Activity 1** Note the value of the number when it's place value changes :

Thousands			Ones		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
			2	0	0

Value of 2 : 200

When the number 2 moves to the hundred thousands place

Thousands			Ones		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
		2	0	0	0

Value of 2 : 2000

Thousands			Ones		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
2	0	0	0	0	0

Value of 2 : 200 000

**From the above we find that** The value of the number increases 10 times when it moves to the left

**Practice 1** Note and complete as the **Ex** :

Number	Place value of 5	Value of 5
7 111 000 656	Tens	50
7 111 000 665	.....	.....
7 111 500 666	.....	.....
7 115 000 666	.....	.....
5 111 000 666	.....	.....

# Unit 1

**Activity 2** Changes the value of a digit 4 when it moves one digit left as **the examples** :

Milliards			Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens
											4

- (a) The value of the digit in the ones place is ..... 4
- (b) The value of the digit in the tens place is .....  $4 \times 10 = 40$
- (c) The value of the digit in the hundreds place is .....  $40 \times 10 = 400$
- (d) The value of the digit in the thousands place is .....
- (e) The value of the digit in the ten thousands place is .....
- (f) The value of the digit in the hundred thousands place is .....
- (g) The value of the digit in the millions place is .....

**From the above we find that**

**The new number value** = The value of the number in the previous place  $\times 10$

**Practice 2** Find the value of the digit 7 when it moves in the place value card :

- (a) The value of the digit in the ones place is .....
- (b) The value of the digit in the tens place is .....
- (c) The value of the digit in the ten thousands place is .....
- (d) The value of the digit in the millions place is .....
- (e) The value of the digit in the hundred millions place is .....
- (f) The value of the digit in the milliard place is .....

**Activity 3** Write the value of each of the following :

- (a) 4 millions is  $4 \times 1\,000\,000 = 4\,000\,000$
- (b) 83 tens is  $83 \times 10 = 830$
- (c) 50 hundred thousands is  $50 \times 100\,000 = 5\,000\,000$
- (d) 42 ten millions is  $42 \times 10\,000\,000 = 420\,000\,000$

**Practice 3** Write the value of each of the following :

- (a) 60 thousands is .....
- (b) 30 tens is .....
- (c) 7 hundreds is .....
- (d) 12 ten thousands is .....
- (e) 39 millions is .....
- (f) 5 millions is .....

**Practice 4** Complete as in (a) :

- (a) 35 thousands = 35 000 = 350 hundreds  
( deleted two zeros from 35 000 )
- (b) 47 thousands = ..... = ..... tens ( deleted zero from 47 000 )
- (c) 26 millions = ..... = ..... thousands ( deleted 3 zeros )
- (d) 13 millions = ..... = ..... hundred thousands ( deleted 5 zeros )
- (e) 61 ten thousands = ..... = ..... Thousands ( deleted 3 zeros )
- (f) 82 tens thousands = ..... = ..... hundreds ( deleted 2 zeros )

# Unit 1

**Activity 4** Note the value and the place value of the number :

Thousands			Ones		
Hundred	Tens	Ones	Hundred	Tens	Ones
	3	0	0	0	0

The value 30 000

Thousands			Ones		
Hundred	Tens	Ones	Hundred	Tens	Ones
3	0	0	0	0	0

The value 300 000

Note 300 000  $>$  30 000

**From the above we find that** The number with the most digits is always the greatest number

**Practice 5** Compare using the suitable sign ( $>$ ,  $=$  or  $<$ ) as in (a) :

(a) Value of (3) in hundreds place

$>$

Value of (3) in units place

(b) Value of (7) in thousands place

.....

Value of (7) in ten thousands place

(c) Value of (4) in hundreds millions place

.....

Value of (4) in millions place

(d) Value of (9) in ten thousands place

.....

Value of (9) in ten millions place

(e) Value of (6) in ten thousands place

.....

Value of (6) in ten millions place

(f) Value of (8) in thousands place

.....

Value of (2) in hundreds thousands place



**Practice 6** Complete as in ( a ) :

- (a) Number of hundreds in 1000 equals 10.

**Solution method :** We remove two zeros from the right ,  
then the number of hundreds is 10

- (b) Number of hundreds in 3 000 equals .....
- (c) Number of hundreds in 70 000 equals .....
- (d) Number of hundreds in 145 000 equals .....
- (e) Number of hundreds in 1 000 000 000 equals .....

**Practice 7** If you know that a colony of ants has 333 333 ants ,  
then answer the following :

- (a) The place in which the digit 3 equals to 10 times it's value in the ten thousands place is .....

**Solution :** value of 3 in ten thousands place = 30000

So the new place value for (  $30000 \times 10$  ) is .....

- (b) The place in which the digit 3 is equal to 100 times it's value in the ones place is .....

**Solution :** value of 3 in ones place = .....

So the place value for ( .....  $\times 100$  ) is .....

- (c) How many times is the number in the thousands place equal to the number in the tens place?

**Solution :** The value of the number in the thousandths place  
= ..... double in the tens place

# Unit 1

**Practice 8** Answer the following :

- (a) ( 4 tens , 3 ones )  $\times 10 = 43 \times 10. = \dots\dots\dots$
- (b) ( 2 hundreds, 3 tens )  $\times 10 = \dots\dots\dots \times 10. = \dots\dots\dots$
- (c) ( 7 thousands , 8 hundreds )  $\times 100 = \dots\dots \times \dots\dots = \dots\dots\dots$
- (d) ( 6 hundreds , 4 tens )  $\times 100 = \dots\dots \times \dots\dots = \dots\dots\dots$
- (e) ( 4 ten thousands , 3 tens )  $\times 100 = \dots\dots \times \dots\dots = \dots\dots\dots$
- (f) Ring 100 times the number 560 ( 5 600 - 56 000 )
- (g) Ring 10 times 37 ( 37 000 - 370 )
- (h) Ring 100 times the number 719 ( 71 900 - 719 000 )
- (i) Ring 100 times the number 1843 ( 184 300 - 18 430 )

**Practice 9** Answer the following :

If each ant queen lays **400** eggs per year in batches ,  
each batch consists of **10** eggs.

- (a) Choose : number of batches per year =  $\dots\dots\dots$  batches  
( 40 - 400 - 4 000 )
- (b) How many eggs will be laid in each case?
  - If there are **10** queens in the colony : 4 000
  - If there are **100** queens in the colony :  $\dots\dots\dots$
  - If there are **1000** queens in the colony :  $\dots\dots\dots$



## Self - check on lesson ( 3 , 4 )

**1** Note and then complete the table :

	The digit ( 5 )		The digit ( 1 )	
	Place value	Value	Place value	Value
30 506	<b>Hundreds</b>	<b>500</b>	<b>Ten thousands</b>	<b>30000</b>
379 058	.....	.....	.....	.....
253 401	.....	.....	.....	.....
501 340	.....	.....	.....	.....
935 120	.....	.....	.....	.....

**2** Complete as in ( a ) :

- (a) The value of (3) in **157 329** is **300**  
and it's place value is **hundreds**
- (b) The value of (1) in **1044 003** is .....  
and it's place value is .....
- (c) The value of (4) in **9 543 567** is .....  
and it's place value is .....
- (d) The value of (9) in **80 079 654** is .....  
and it's place value is .....
- (e) The value of (5) in **95000 000** is .....  
and it's place value is .....

# Unit 1

## 3 Answer the following :

- a ( 3 tens , 9 ones )  $\times 10 = 39 \times 10 = \dots\dots\dots$
- b ( 5 thousands, 2 hundreds )  $\times 100 = \dots\dots \times 100 = \dots\dots\dots$
- c ( 9 hundreds, 9 thousands )  $\times 1000 = \dots\dots \times \dots\dots = \dots\dots\dots$
- d ( 56 thousands )  $\times 100 = \dots\dots \times \dots\dots = \dots\dots\dots$
- e Ring the number that 100 times 42 ( 420 - 4200 )
- f Ring the number that 100 times 123 ( 123 000 - 12300 )
- g Ring the number that 10 times 450 ( 450 000 - 4500 )
- h Ring the number that 10 times 90 ( 900 - 9010 )

## 4 Find the value of the digit 3 when it moves in the place value card :

- a The value of the digit in the ones place is  $\dots\dots\dots$
- b The value of the digit in the tens place is  $\dots\dots\dots$
- c The value of the digit in the hundreds place is  $\dots\dots\dots$
- d The value of the digit in the thousands place is  $\dots\dots\dots$
- e The value of the digit in the ten thousands place is  $\dots\dots\dots$
- f The value of the digit in the millions place is  $\dots\dots\dots$
- g The value of the digit in the ten millions place is  $\dots\dots\dots$
- h The value of the digit in the hundred millions place is  $\dots\dots\dots$
- i The value of the digit in the billions place is  $\dots\dots\dots$

**5** Compare using the suitable sign ( $>$ ,  $=$  or  $<$ ) :

- |   |                      |   |
|---|----------------------|---|
| (a) Value of <b>(1)</b> in<br>hundred thousands place | <input type="text"/> | value of <b>(1)</b> in<br>ten millions place      |
| (b) Value of <b>(5)</b> in<br>thousands place         | <input type="text"/> | value of <b>(5)</b> in<br>ten thousands place     |
| (c) Value of <b>(2)</b> in<br>hundred place           | <input type="text"/> | value of <b>(2)</b> in<br>ones place              |
| (d) Value of <b>(8)</b> in<br>ten thousands place     | <input type="text"/> | value of <b>(8)</b> in<br>ten millions place      |
| (e) Value of <b>(4)</b> in<br>thousands place         | <input type="text"/> | value of <b>(4)</b> in<br>hundred thousands place |
| (f) Value of <b>(3)</b> in<br>hundred millions place  | <input type="text"/> | value of <b>(3)</b> in<br>millions place          |

**6** Find the value of the following :

- (a) **9** tens = .....
- (b) **3** hundreds = .....
- (c) **60** tens = .....
- (d) **59** thousands = ..... = ..... hundreds = ..... tens
- (e) ..... thousands = ..... = **910** hundreds = ..... tens
- (f) ..... thousands = ..... = ..... hundreds = **7000** tens

# Unit 1

**7** Find the number of ants in the ant hills for each case, as the **Ex** :

<b>Ex</b> 7 Ants in one hill $7 \times 10 = 70$ ants in 10 hill ants	92 Ants in one hill ..... ants in 10 hill ants
12 Ants in one hill ..... ants in 10 hill ants	156 Ants in one hill ..... ants in 10 hill ants
28 Ants in one hill . ..... ants in 10 hill ants	1786 Ants in one hill ..... ants in 10 hill ants

**8** Write the place value in each case :

- When a number in the tens place is multiplied by 10 ,  
the number moves to the ..... place
- When a number in the thousands place is multiplied by 10 ,  
the number moves to the ..... place
- When a number in the hundred thousands place is multiplied by 10,  
the number moves to the ..... place
- When a number in the tens of millions is multiplied by 10 ,  
the number moves to the ..... place

**9** Complete as in ( a ) :

- The number of tens in 1000 equals .....

**Solution method :** remove only one zero from the right :

so the number of tens is equal 100

- The number of tens in 2000 equals .....
- The number of hundreds in 90000 equals .....
- The number of hundreds in 380000 equals .....

## Many ways to write - Composing and decomposing

### Activity 1 The Word form ( **letters** ) :

2 617 134 : Writes 2 millions , 617 thousands , 134

Read as : Two millions , six hundred, seventeen thousand ,  
one hundred and thirty-four

### Practice 1 Write the number in the word form :

(a) 3 400 600 : ..... millions , ..... thousands , .....

Reads as : .....

(b) 14 100 500 : ..... millions , ..... thousands , .....

Reads as : .....

(c) 900 100 900 : ..... millions , ..... thousands , .....

Reads as : .....

### Activity 2 The expand form :

$$1057444 = 1000000 + 50000 + 7000 + 400 + 40 + 4$$

### Practice 2 Write the number in the expand form :

(a) 4 131 313 = ..... + ..... + ..... + ..... + ..... + ..... + .....

(b) 15 055 055 = ..... + ..... + ..... + ..... + ..... + ..... + .....

(c) 202 834 267 = ..... + ..... + ..... + ..... + .....

+ ..... + ..... + .....

# Unit 1

**Practice 3** Write the following numbers in standard form :

- (a) One million and eight hundred thousands = .....
- (b) Half a million = .....
- (c) 90 millions ,12 thousands and 50 = .....
- (d) Eleven millions and sixty = .....
- (e) One hundred seventy millions , one hundred thousand and seventy = .....
- (f) Quarter of a million = .....

**Practice 4** Write the number **1 467 303 221** in different numerical forms :

Standard form : .....

Expand form : ..... + ..... + ..... + ..... + ..... + .....  
+ ..... + ..... + ..... + .....

Word form : ..... billions , ..... millions , ..... thousands , .....

**Practice 5** Write the number **9 231 043 204** in different forms :

Standard form : .....

Expand form : ..... + ..... + ..... + ..... + ..... + .....  
+ ..... + ..... + ..... + .....

Word form : ..... billions , ..... millions , ..... thousands , .....



## Forming numbers

■ To create the greatest number : arrange the digits from big to small from left to right. Example : Write the greatest number that can be formed using all of the following cards :

**6 2 9 3** → the greatest number = **9632**

**Practice 6** Write the greatest number :

**a** **6 2 5 1**

The greatest number = .....

**b** **6 4 8 1**

The greatest number = .....

■ To create the smallest number : arrange the digits from small to big from left to right. Example : Write the smallest number that can be formed using all of the following cards :

**5 2 1 7** → the smallest number = **1257**

**Practice 7** Write the smallest number :

**a** **3 7 5 4**

The smallest number = .....

**b** **8 1 2 7**

The smallest number = .....

■ To form the smallest number with zero : We arrange these numbers in an ascending order from left to right ,then we replace the digit zero with the digit after it . Example : form the smallest number from the following :

**0 8 1 4** the order = 0148 **replace** → smallest number = **1048**

**Practice 8** Write the smallest number :

**a** **9 3 0 5**

The smallest number = .....

**b** **6 1 9 0**

The smallest number = .....

# Unit 1

### Activity 3 Number decompose :

Milliards	Millions			Thousands			Ones		
Ones	Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones
				3	4	5	5	3	2

Forming number = **345 532**

Expand form = **2 + 30 + 500 + 5 000 + 40 000 + 300 000**

Number decompose =  $(2 \times 1) + (3 \times 10) + (5 \times 100) + (5 \times 1000)$   
 $+ (4 \times 10\,000) + (3 \times 100\,000)$

**Practice 9** Compose and decompose the following numbers as above in the activity :

a	Milliards	Millions			Thousands			Ones		
	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones
	5	4	0	0	1	5	9	0	2	4

Composing number = .....

Number decompose = .....

b	Milliards	Millions			Thousands			Ones		
	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones
	6	1	2	4	0	3	0	4	2	0

Composing number = .....

Number decompose = .....

**Practice 10** Make up the following numbers :

Number decompose =  $(3 \times 100) + (4 \times 1000) + (5 \times 10\,000)$   
 $+ (6 \times 100\,000)$

Expand form = ..... + ..... + ..... + .....

Milliards			Millions			Thousands			Ones		
Ones	Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens

Composing number = .....

**Activity 4** What is the number ?

A five-digit number containing  
**7** in the hundreds place, and **3**  
 in the Ten thousands place and  
 the rest are zeros

Thousands			Ones		
Hundred	Tens	Ones	Hundred	Tens	Ones
	3	0	7	0	0

**Solution :** the number is : **30700**

**Practice 11** Write the number :

Milliards			Millions			Thousands			Ones		
Ones	Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens

- (a)** A 8-digit number with **4** in the ten millions place and **4** in the ten thousands place and the rest are zeros

**Solution :** The number is : .....

- (b)** A 10-digit number with **9** in the milliards place and **5** in the hundred thousands place and the rest are zeros

**Solution :** The number is : .....

- (c)** A 9-digit number with **2** in the hundred millions place and **6** in the tens place and the rest are zeros

**Solution :** The number is : .....

## Self-check on lesson (5, 6)

**1** Complete as in (a) :

- (a) **1200304506** : One milliards, two hundred millions  
, three hundreds four thousands, five hundreds and six
- (b) **8070600043** : ..... milliards , ..... millions  
, ..... thousands , .....
- (c) **2468570009** : ..... milliards , ..... millions  
, ..... thousands , .....
- (d) **1005060320** : ..... milliards , ..... millions  
, ..... thousands , .....
- (e) **9700004001** : ..... milliards , ..... millions  
, ..... thousands , .....

**2** Match the cards that represent the same number :

880000

Four hundred thousands and fifty

550400

Eight hundred and eighty thousands

800080

Five hundred fifty thousands and four hundreds

400050

eight hundred thousands and eighty

**3 Choose the correct answer from the brackets :**

- (a) Five hundred fifty thousands and five = .....  
( 500 505 , 505 050 , 550 005 )
- (b) Eight hundred thousands and eighty = .....  
( 800 080 , 880 000 , 8 000 008 )
- (c) Six millions, sixty six thousands and six hundreds = .....  
( 600 066 600 , 60 066 600 , 6 000 066 600 )
- (d) One hundred twenty one thousands , one hundred  
and twenty = ..... ( 12 121 , 112 120 , 121 120 )
- (e) One million ,seven hundred thousands and three = .....  
( 1700 003 , 170 003 , 1700 030 )
- (f) Nine hundred millions, nine thousands and ninety = .....  
( 900 090 090 , 900 009 090 , 90 900 900 )

**4 Write the following numbers in standard form :**

- (a) Two hundred thousands four hundreds and seventy : .....
- (b) One hundred sixty thousands and seventy four: .....
- (c) Ninety thousands and eleven : .....
- (d) Fifty millions, three hundred thousands and eight : .....
- (e) One millions , one hundred thousand and one : .....

## Unit 1

**5** Write the greatest and smallest number formed from the following digits as in (a) :

(a) 6, 1, 5, 3, 8, 4

The greatest number : 865431

The smallest number : 134568

(b) 7, 0, 2, 9, 4, 1

The greatest number : .....

The smallest number : .....

(c) 0, 9, 6, 3, 8, 7

The greatest number : .....

The smallest number : .....

(d) 1, 8, 4, 0, 5, 3, 2, 9

The greatest number : .....

The smallest number : .....

(e) 8, 1, 2, 4, 0, 5, 3, 7, 6

The greatest number : .....

The smallest number : .....

**6** Answer the following :

(a) Write the word form of the number 48 : .....

(b) Write the standard form of the number Three hundreds and seventy : .....

(c) Write the standard form of the number

$20\,000 + 7\,000 + 400 + 20 + 2$  : .....

(d) Write the word form of the number

$700\,000 + 60\,000 + 20 + 9$  : .....

(e) Write the extended form of the number 50 391 : .....

**7** Complete the following :

Standard form	Expanded form	Word form
8427995049		
	6 + 700 + 4000	
		Two millions, three hundred million

**8** Decompose the following numbers :

- a) The numbers = **3** millions , **277** thousands , **191**

Milliards	Millions			Thousands			Ones		
Ones	Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones

Decomposing the number = .....

- b) The number = **Three** millions, **thirty seven** millions,  
**six** hundreds and **nineteen** thousands

Milliards	Millions			Thousands			Ones		
Ones	Hundred	Tens	Ones	Hundred	Tens	Ones	Hundred	Tens	Ones

Decomposing the number = .....

# Comparing Numbers - Descending and Ascending Numbers

Lesson

7, 8, 9

## Comparing numbers

The number with more digits  
It is the greatest number

If the two numbers have the same number of digits  
We compare the digits of the two numbers from left to right in order

**Example :** the 2 numbers

250025 and 25025

↓ ↓  
**6-digits**      **5-digits**

**so**  $250025 > 25025$

**Example :** the 2 numbers

900734 and 900634

**so**  $900734 > 900634$

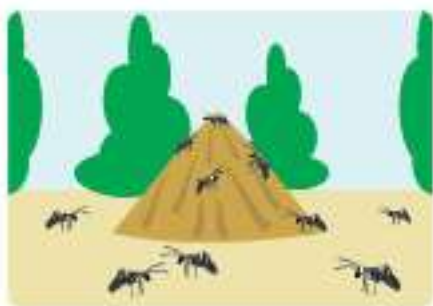
**because** value of 7 more than value of 6

**Practice**

**1**

Ring the most number of ants (comparing to ant hills) :

a



4356



4502

b



Fifteen thousands ,  
one hundred and eight



Fourteen thousands ,  
one hundred and eight



**Practice 2** Use the suitable sign (  $>$  ,  $=$  ,  $<$  ) :

- (a) 6000 700 190  600 910 700
- (b) 9 897 555 000  9 879 555 000
- (c) 4 444 999 000  4 999 444 000
- (d) 3 000 000 000  3000 millions
- (e) 1 milliards , 800 thousands  milliards , 800 millions

**Activity 1** Answer the following :







- (a) Write a number has hundred thousand less than 8 612 793 : .....
- Solution :** We write a standard form for the same number that contains a digit less than the digit in the hundred thousand place is (6)
- Example :** 8 512 793
- (b) Write a number has million more than 8 933 001 : .....
- Solution :** We write a standard form for the same number that contains a digit less than the digit in the millions place is (8)
- Example :** 993 3001
- (c) Write a number has milliard more than 5 555 555 555 : .....
- Solution :** We write a standard form for the same number that contains a digit less than the digit in the milliard place is (5)
- Example :** 6 555 555 555

**Practice 3** Answer the following :

- (a) Write a number has hundred thousand less than 893 824 : .....
- (b) Write a number has ten millions more than 4 450 600 125 : .....
- (c) Write a number has milliard more than 3 456 789 000 : .....

# Unit 1

**Practice 4** Write the suitable sign :

	<b>Ant hill</b>	<b>&lt; , &gt; , =</b>	<b>Ant hill</b>
<b>a</b>			
	40000 + 3000 + 100 + 10		40000 + 3000 + 100 + 20
<b>b</b>			
	Five milliards , two hundred twenty million, five hundreds six thousands and forty		Five milliards , two hundred twenty million, five hundreds forty thousand, and six
<b>c</b>			
	One million, nine hundred seventy-six thousands, eight hundreds and eighty-eight		1000000 + 900000 + 70000 + 6000 + 800 + 80 + 8

**Activity 2 The ascending order :**

Arrange the following numbers from the smallest to the greatest

**394402 , 594402 , 355210**

Choose the smallest number and write it in the first square  
(cross out this number)

355210

.....

.....

Choose the smallest number from the rest and write it in the second square (cross out this number)

355210

3994402

.....

Repeat the previous steps for the rest of the numbers (get the order)

**The order**

355210

3994402

5994402

**Practice 5** Arrange the following numbers in an ascending order :

(a) **542286 , 542197 , 542904 , 542409**

**The order :** ....., ....., ....., .....

(b) **601909 , 602809 , 609109 , 608209**

**The order :** ....., ....., ....., .....

(c) - Three millions , ten millions, thirty-four thousands .

- Three millions, one hundred million, thirty-four thousands

- Three millions, ten millions , thirty-four

**the order :** .....

, .....

, .....

# Unit 1

## Activity 3 The descending order :

Arrange the following numbers from the greatest to the smallest

990055 , ~~8300011~~ , 3800022

Choose the greatest number and write it in the first square

(cross out this number)

8300011

.....

.....

Choose the greatest number from the rest and write it in the second square

(cross out this number)

8300011

3800022

.....

Repeat the previous steps for the rest of the numbers ( get the order )

The order

8300011

3800022

990055

## Practice 6 Arrange the following numbers in a descending order :

(a) 654 000 , 605400 , 650400 , 645 000

The order : ....., ....., ....., .....

(b) 1234 567 , 123 567 , 124 567 , 1234 678 , 1254 678

The order : ....., ....., ....., .....

- (c) - Five millions, twenty seven thousands, five hundred .  
- Seven millions, seven thousands, and five hundred .  
- Five millions, thirty-seven thousands , five hundred .

The order : .....

, .....

, .....

## Practice

7

Arrange the numbers in ascending order .  
Use the form in which the numbers are written :

- \* Four millions , six hundred thousands and four .
- \* 410164 .
- \* Four millions , six hundred thousands and forty.
- \*  $(10 \times 6) + (10000 \times 4) + (1000000000 \times 4)$  .
- \* 2400046 .

.....

.....

.....

.....

.....

## Practice

8

Arrange the following in descending order.  
Use the standard form :

- \*  $40\ 000\ 000 + 5\ 000\ 000 + 7\ 000 + 90$  .
- \*  $(100 \times 9) + (10\ 000 \times 5) + (1\ 000\ 000 \times 5)$   
 $+ (10\ 000\ 000 \times 3) + (1\ 000\ 000\ 000 \times 6)$
- \* Five millions , forty-one thousands , seven hundreds and ninety .
- \*  $6\ 000\ 000\ 000 + 40\ 000\ 000 + 5\ 000\ 000 + 7\ 000 + 90$
- \* 6 025 060 990 .

.....

.....

.....

.....

.....

## Self - check on lesson (7, 8, 9)

**1** Use the suitable sign ( $>$ ,  $=$ ,  $<$ ) as in (a) :

- |   |   |
|---|---|
| <p>(a) 100000 <span style="background-color: #f9f9f9; padding: 0 10px;">&gt;...</span> 10000</p>    | <p>(b) 355480 <span style="background-color: #f9f9f9; padding: 0 10px;">.....</span> 455480</p>     |
| <p>(c) 680001 <span style="background-color: #f9f9f9; padding: 0 10px;">.....</span> 670001</p>     | <p>(d) 900100 <span style="background-color: #f9f9f9; padding: 0 10px;">.....</span> 910008</p>     |
| <p>(e) 7015003 <span style="background-color: #f9f9f9; padding: 0 10px;">.....</span> 7105003</p>   | <p>(f) 8505110 <span style="background-color: #f9f9f9; padding: 0 10px;">.....</span> 9505110</p>   |
| <p>(g) 16000119 <span style="background-color: #f9f9f9; padding: 0 10px;">.....</span> 11000118</p> | <p>(h) 9099909 <span style="background-color: #f9f9f9; padding: 0 10px;">.....</span> 9090999</p>   |
| <p>(i) 6380001 <span style="background-color: #f9f9f9; padding: 0 10px;">.....</span> 6380001</p>   | <p>(j) 12001000 <span style="background-color: #f9f9f9; padding: 0 10px;">.....</span> 10012000</p> |





**2** Answer the following :

- (a) Write a number has hundred thousand less than 893 820 :  
 .....
- (b) Write a number equal to the number 2 445 232 197 :  
 .....
- (c) Make a numeral formula in ten thousands greater than six millions four hundred millions, seven hundred twenty thousands, nine hundreds and eleven :  
 .....
- (d) Make a numeral formula in the hundreds of thousands place less than  $(2 \times 1) + (3 \times 10) + (5 \times 100) + (5 \times 1000) + (4 \times 10000) + (3 \times 100000)$  :

**3** Use the suitable sign ( $>$ ,  $=$ ,  $<$ ) as in (a) :

(a)	14780064	$<$	14790064
(b)	5193492500		Five milliards, three hundred millions, seven hundred fifteen thousands and forty-three
(c)	$(1 \times 1) + (10 \times 8) + (10000 \times 9) + (10000000 \times 4) + (100000000 \times 7)$		$3 + 40 + 600 + 9000 + 70000$
(d)	Seventeen millions, four hundreds twenty-five thousand, six hundreds and five		$(1 \times 5) + (100 \times 6) + (10000 \times 2) + (100000 \times 4) + (1000000 \times 7) + (10000000 \times 1)$
(e)	8 040 761 903		$3 + 900 + 1000 + 60000 + 700000 + 400000000 + 8000000000$
(f)	Four hundreds twenty three thousands and twelve		$1 + 20 + 2000 + 30000 + 400000$

**4** Draw a **circle** the hill with more ants, a square around the hill with fewer ants, and a star around the hill with equal number of ants :

1	2	3	4
			
Two hundred thirty three millions , two hundred sixty three thousands , five hundreds.	$4 + 100 + 2000 + 20\,000 + 10\,000\,000 + 900\,000\,000$	$(1 \times 7) + (10 \times 7) + (100\,000 \times 7) + (1\,000\,000\,000 \times 7)$	$(1 \times 4) + (100 \times 1) + (1000 \times 2) + (10\,000 \times 2) + (100\,000 \times 3) + (1\,000\,000\,000 \times 9)$

# Unit 1

**5** Arrange the following numbers in an ascending order :

(a) 78 090 , 79 010 , 78 091 , 79 100 , 78 999

The order : ....., ....., ....., ....., .....

(b) 505 055 , 505 505 , 550 055 , 550 550 , 555 005

The order : ....., ....., ....., ....., .....

- (c) - Nine milliard, ninety million, nine hundred thousand  
 - Nine milliard, nine million, nine hundred  
 - Nine milliard, nine hundred million, ninety

The order : .....  
 , .....  
 , .....

**6** Rewrite the numeral form in standard form. Next, arrange the numerical form in descending order ( **From largest to smallest** ) :

- \* Three hundred sixty two thousand, four hundred and ninety one .
- \* 363906 .
- \*  $(10 \times 8) + (100 \times 8) + (1\ 000 \times 2) + (10\ 000 \times 6) + (100\ 000 \times 3)$
- \*  $(10 \times 9) + 4\ 000 + 60\ 000 + 300\ 000$
- \* Three hundred and sixty-three thousand five hundred and eighty-nine.

Standard form	The order



# Predicting the Unpredictable - Rounding Rules

Lesson

10, 11

**Estimation** : It is used in situations where you do not need an exact number .

Estimation use : front end estimation :

Write the digit in the largest place in the numerical form, or the number with the greatest place value, and we put zeros in the rest places

**Practice 1** Estimate as the examples :

	The number	Estimate the number use Front-end estimation
a	78 920 416	70 000 000
b	Nine milliards, four hundred twelve million, seventy thousands and five	9 milliards
c	$4 + 80 + 1000\ 900 + 20\ 000 + 400\ 000 + 7\ 000\ 000 + 60\ 000\ 000$	60 000 000
d	Four hundred thousands , seven hundreds and ninety-five	.....
e	$5 + 60 + 5000 + 70000000 + 8000000000 + 90000000000$	.....
f	8723	.....
g	$(1 \times 9) + (10 \times 2) + (100 \times 5) + (1000 \times 6) + (10000 \times 8)$	.....

# Unit 1

**Practice 2** Circle the best estimate of the following numbers use front-end estimation :

	Number	Options for estimating the number through The first digit from the left
(a)	19 780 506	9 000 000    or    10 000 000
(b)	$1 + 600 + 80\,000 + 900\,000$	Million    or    900 000
(c)	Eight hundred twenty five thousands , six hundreds and nineteen.	800 000    or    8 000 000
(d)	2 567 814 900	Two millions    or    2 000 000
(e)	$(1 \times 3) + (100 \times 2) + (10\,000 \times 4) + (100\,000 \times 9) + (10\,000\,000 \times 7)$	70 000 000    or    90 000 000

**Practice 3** Use the estimation of the number use front-end estimation to estimate the following :

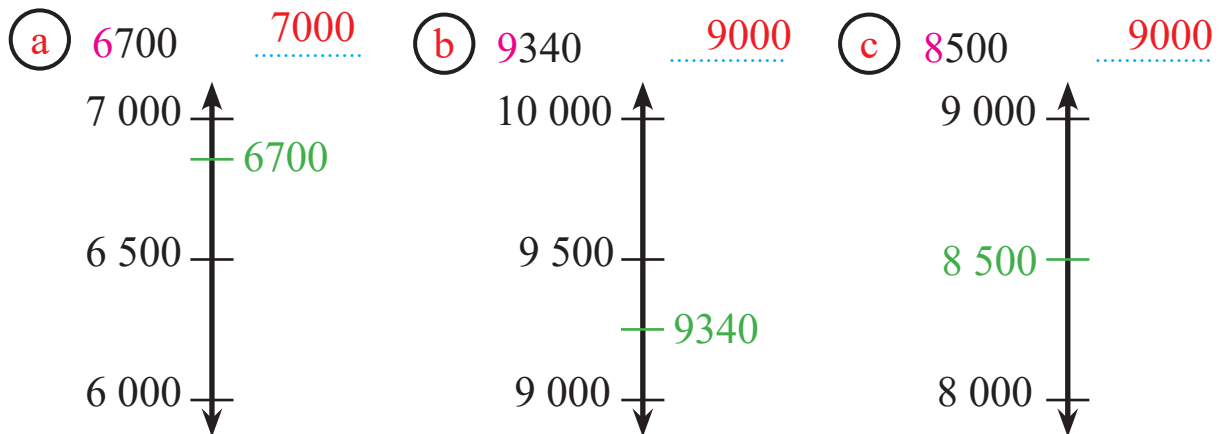
- (a) 78 512 900      the estimation:.....
- (b) 3 900 500 231      the estimation:.....
- (c) Seventy-five million, six hundred twenty-two thousands, four hundreds and thirteen.      standard formula : .....
- The estimation:.....
- (d)  $(1 \times 6) + (100 \times 4) + (10\,000 \times 9) + (100\,000 \times 8) + (10\,000\,000 \times 5)$
- The estimation:.....
- (e)  $60 + 400 + 7\,000 + 800\,000$
- The estimation:.....

## Rounding

**Rounding** : It is a type of estimation ,  
It is used when an accurate answer is needed.

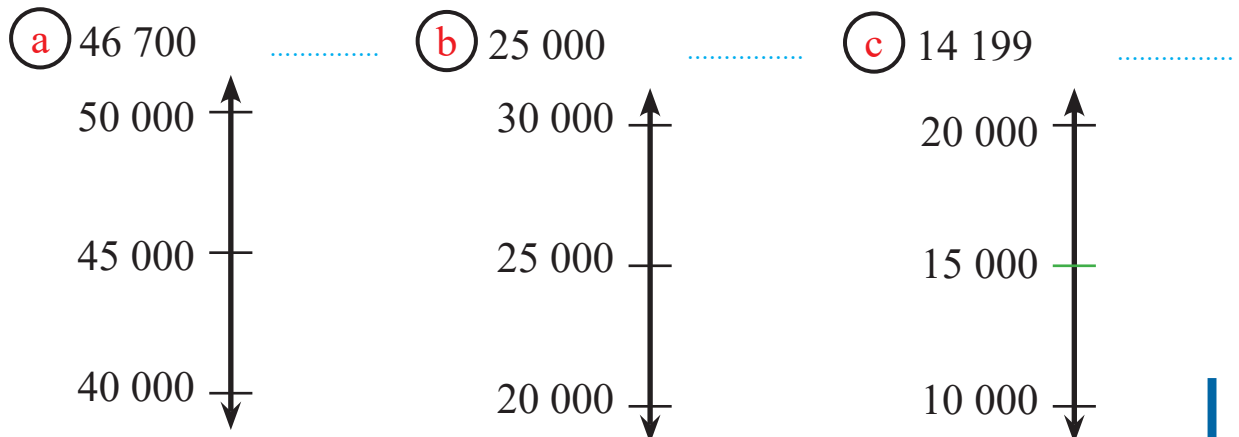
### Activity 1 Round to the nearest thousand (mid-point strategy) :

**Rounding method** : We draw a number line and specify the midpoint value on it . If the number is in the middle or closer to the greatest number, then we write the greatest number , and if the number is before the middle, then we write the smallest number



### Practice 1 Round to the nearest ten thousands (mid-point strategy) :

- We draw a number line and specify the midpoint value on it



# Unit 1

**Rounding rule :-** circle the digit to the right of the digit to be rounded  
 If it is **5** or greater, we add one to the digit  
 - If it is **4** or less then we do nothing  
 - And we put zeros in all the digit before the one to which you want to round

**Activity 2** Round to the nearest thousand **234432**  
 ( **Look at the thousand place** ) :

Milliards		Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	
				2	3	4	4	3	2	

The digit to be rounded

$4 < 5$   
 so we do nothing

After rounding

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
				2	3	4	0	0	0

**Practice 2** Round to the nearest thousand as in (a , b)  
 (Look at the thousand place) :

- |            |       |             |         |
|------------|-------|-------------|---------|
| (a) 7578   | 8000  | (b) 3950231 | 3950000 |
| (c) 512900 | ..... | (d) 3131    | .....   |
| (e) 690054 | ..... | (f) 77777   | .....   |
| (g) 169444 | ..... | (h) 459900  | .....   |

**Practice 3** Round to the nearest ten thousand as in (a)  
( Look at the ten thousand place ) :

Milliards		Millions			Thousands			Ones		
Ones		Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
					1	3	6	1	5	0

The digit to be rounded

$6 > 5$   
So we add one

- (a) 136150      140 000
- (b) 206290      .....
- (c) 7435025353      .....
- (d) 25680345      .....
- (e) 753159      .....

**Practice 4** Round as in (a) :

Milliards		Millions			Thousands			Ones		
Ones		Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		3	4	7	5	1	4	0	1	0

The digit to be rounded

$5 = 5$   
So we add one

- (a) 349514010 to the nearest million      350 000 000  
( We look at the millions place )
- (b) 5367544 to the nearest million      .....
- (c) 2453000601 to the nearest million      .....
- (d) 5266747023 to the nearest milliard      .....
- ( We look at the milliards place )
- (e) 10944352543 to the nearest milliard      .....

# Unit 1

## Practice 5

Complete then ring which of the following strategies is closest to the actual result as in (a) :

(a)  $47 + 31$

$$\begin{array}{r} 47 \rightarrow 40 \\ + 31 \rightarrow 30 \\ \hline 70 \end{array}$$

Estimation strategy  
number through the first  
digit from the left

$$\begin{array}{r} 47 \rightarrow 50 \\ + 31 \rightarrow 30 \\ \hline 80 \end{array}$$

Rounding rule  
strategy

Actual answer :  $47 + 31 = 78$

(b)  $29 + 21$

$$\begin{array}{r} 29 \rightarrow \dots \\ + 21 \rightarrow \dots \\ \hline \dots \end{array}$$

Estimation strategy  
number through the first  
digit from the left

$$\begin{array}{r} 29 \rightarrow \dots \\ + 21 \rightarrow \dots \\ \hline \dots \end{array}$$

Rounding rule  
strategy

Actual answer :  $29 + 21 = \dots$

(c)  $66 + 15$

$$\begin{array}{r} 66 \rightarrow \dots \\ + 15 \rightarrow \dots \\ \hline \dots \end{array}$$

Estimation strategy  
number through the first  
digit from the left

$$\begin{array}{r} 66 \rightarrow \dots \\ + 15 \rightarrow \dots \\ \hline \dots \end{array}$$

Rounding rule  
strategy

Actual answer :  $66 + 15 = \dots$

(d)  $59 - 41$

$$\begin{array}{r} 59 \rightarrow \dots \\ - 41 \rightarrow \dots \\ \hline \dots \end{array}$$

Estimation strategy  
number through the first  
digit from the left

$$\begin{array}{r} 59 \rightarrow \dots \\ - 41 \rightarrow \dots \\ \hline \dots \end{array}$$

Rounding rule  
strategy

Actual answer :  $59 - 41 = \dots$

## Self-check on lesson (10, 11)

**1** Use the estimate of the number use front-end estimation for the following numbers :

(a) 86433920      The estimation : .....

(b) 6627513202      The estimation : .....

(c) One hundred sixty three millions, four hundred thirty thousands, eight hundred and two .

Standard form : .....

The estimation : .....

(d)  $(1 \times 6) + (100 \times 3) + (10000 \times 7) + (100000 \times 2) + (1000000 \times 9)$

Standard form : .....

The estimation : .....

(e)  $700000 + 700 + 70 + 7$

Standard form : .....

The estimation : .....

**2** Round to the nearest ten thousand (the midpoint strategy) :

(a) 16 401      .....

20 000

10 000



(b) 35 500      .....

40 000

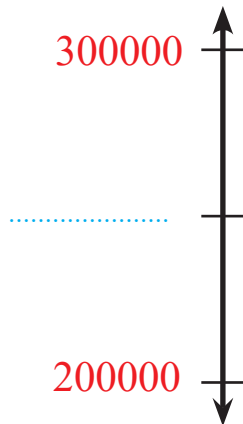
30 000



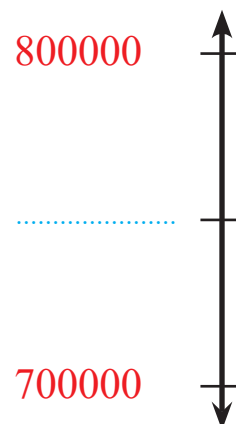
# Unit 1

**3** Round to the nearest hundred thousand (**midpoint strategy**) :

(a) 250000 .....



(b) 700500 .....



**4** Round the following :

Milliards	Millions			Thousands			Ones		
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
	2	5	2	5	2	3	2	1	2

The digit to be rounded

5 = 5

So we add one

(a) 252523212 to the nearest million .....

(b) 4021589 to the nearest thousand .....

(c) 8570369 to the nearest hundred thousand .....

(d) 357159 to the nearest ten .....

(e) 6549870321 to the nearest milliard .....

(f) 309761 to the nearest ten thousand .....

(g) 1340090082 to the nearest hundred million .....



- 5** Ring the best estimate for the following numbers through the first digit from the left

	Number	Options for estimating the number through The first digit from the left
(a)	555555	500000 or 600000
(b)	$5 + 10 + 20000 + 1000000$	million or 2000000
(c)	Seven hundred million twenty five thousand	800000000 or 700000000
(d)	5990000900	5 milliard or 6 milliard
(e)	$(10 \times 1) + (100 \times 5) + (10000 \times 4) + (10000000 \times 2)$	20000000 or 2000000

- 6** Answer the following :

- (a) The aircraft altitude has increased by 2721 feet .  
Round this number to the nearest thousand.

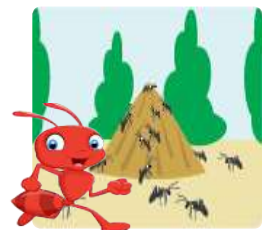
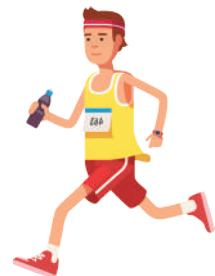
Round : .....

- (b) A runner ran 1537 metres.  
Round this number to the nearest hundred

Round : .....

- (c) A number of ants is 23386 in a colony .  
Round this number to nearest ten thousands.

Round : .....



# Unit 1

**7** Ring which of the following strategies is closest to the actual result :

**a**  $53 + 26$

$$\begin{array}{r} 53 \rightarrow \dots\dots \\ + \quad \quad + \\ 26 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

Estimation strategy  
number through  
front-end estimation

$$\begin{array}{r} 53 \rightarrow \dots\dots \\ + \quad \quad + \\ 26 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

Rounding rule  
strategy

**Actual answer :**  $53 + 26 = \dots\dots$

**b**  $18 + 12$

$$\begin{array}{r} 18 \rightarrow \dots\dots \\ + \quad \quad + \\ 12 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

Estimation strategy  
number through  
front-end estimation

$$\begin{array}{r} 18 \rightarrow \dots\dots \\ + \quad \quad + \\ 12 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

Rounding rule  
strategy

**Actual answer :**  $18 + 12 = \dots\dots$

**c**  $55 + 19$

$$\begin{array}{r} 55 \rightarrow \dots\dots \\ + \quad \quad + \\ 19 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

Estimation strategy  
number through  
front-end estimation

$$\begin{array}{r} 55 \rightarrow \dots\dots \\ + \quad \quad + \\ 19 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

Rounding rule  
strategy

**Actual answer :**  $55 + 19 = \dots\dots$

**d**  $75 - 33$

$$\begin{array}{r} 75 \rightarrow \dots\dots \\ - \quad \quad - \\ 33 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

Estimation strategy  
number through  
front-end estimation

$$\begin{array}{r} 75 \rightarrow \dots\dots \\ - \quad \quad - \\ 33 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

Rounding rule  
strategy

**Actual answer :**  $75 - 33 = \dots\dots$

## Self - check 1 unit 1

### 1 Complete the following :

- (a)  $\frac{1}{4}$  millions = ..... = .....
- (b) 51 thousands = ..... = ..... ten  
(we removed a zero from 51000)
- (c) Number of hundreds in 6000 equal .....
- (d) ( 8 hundreds , 1 ten )  $\times$  100 = .....  $\times$  ..... = .....
- (e) Circle the number that 100 times the number 23  
( 2300 - 230 - 23000 )
- (f) Value of (3) in ..... value of (3) in  
ten million place                      ten thousand place
- (g) 5 hundreds = .....
- (h) 6 , 9 , 3 , 8 , 0 , 1  
The greatest number : ..... , the smallest number : .....
- (i) 5680421226 ..... 5598672565
- (j) Write a number has hundred thousand less  
than 1872093 : .....

### 2 Arrange the numbers in ascending order :

- (a) Four milliards , six hundred thousands and four .
- (b) 410164 .
- (c) Four milliards , six hundred thousands and forty .
- (d)  $(10 \times 6) + (10000 \times 4) + (1000000000 \times 4)$  .
- (e) 2400046 .

The order : b , ..... , ..... , ..... , .....

# Unit 1

**3** Ring which of the following strategies is closest to the actual result :

\*  $41 + 48$

$$\begin{array}{r} 41 \rightarrow \dots\dots\dots \\ + \quad \rightarrow \dots\dots\dots \\ 48 \rightarrow \dots\dots\dots \\ \hline \end{array}$$

Estimation strategy  
number through  
front-end estimation

$$\begin{array}{r} 41 \rightarrow \dots \\ + \quad \rightarrow \dots \\ 48 \rightarrow \dots \\ \hline \end{array}$$

Rounding rule  
strategy

Actual answer :  $41 + 48 = \dots\dots$

**4** Round to the nearest thousand (**mid-point strategy**) :

(a) **3701** .....



(b) **9450** .....



**5** Make a numerical form greater than **345670** and a numerical form less than **345670** , then write all three numerical forms in descending order :

Standard form	The descending order
Number : <b>345670</b>	.....
The greatest number is : .....	.....
The smaller number is : .....	.....

## Self - check 2 Unit 1

### 1 Complete the following :

- (a)  $145\ 000 = \dots\dots\dots$  hundreds
- (b) (4 ten thousands , 3 tens )  $\times 100 = \dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$
- (c) 4 , 0 , 2 , 7 , 1 , 5

The smallest number :  $\dots\dots\dots$  , the greatest number :  $\dots\dots\dots$  .

- (d) 1 milliard , 800 thousands  $\left( \dots\dots\dots \right)$  1 milliard , 800 millions

### 2 Arrange in descending order using the standard form :

- (a)  $(1 \times 1) + (100 \times 3) + (1000 \times 4) + (10000 \times 5) + (100000 \times 6)$  .
- (b) Six hundred fifty-four thousands, three hundreds and ten.
- (c)  $(1 \times 1) + (10 \times 1) + (100 \times 3) + (1000 \times 4) + (10000 \times 5) + (100000 \times 6)$
- (d) Five hundred ninety-nine thousands, three hundreds and ten .

The order :  $\dots\dots\dots$  (c)  $\dots\dots\dots$  ,  $\dots\dots\dots$  ,  $\dots\dots\dots$  ,  $\dots\dots\dots$

### 3 Ring the strategy that is closest to the actual result :

\*  $85 - 44$

$$\begin{array}{r} 85 \\ - 44 \\ \hline \end{array}$$

Estimation strategy  
number through  
front-end estimation

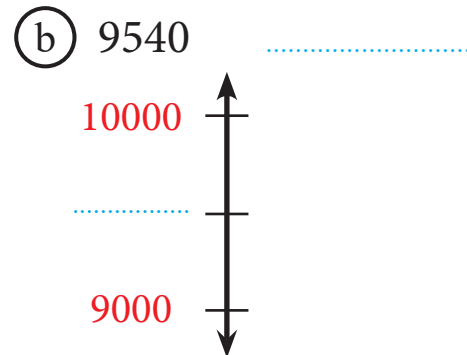
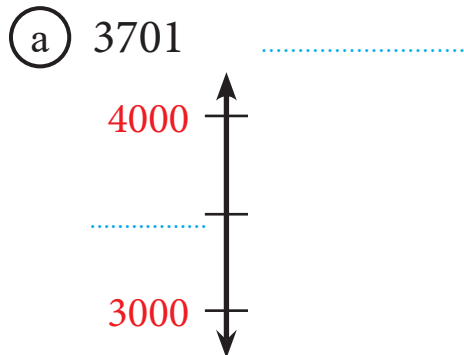
$$\begin{array}{r} 85 \\ - 44 \\ \hline \end{array}$$

Rounding rule  
strategy

Actual result :  $85 - 44 = \dots\dots\dots$

# Unit 1

**4** Round to the nearest thousand (**mid-point strategy**) :



**5** Choose the correct answer from the brackets :

- (a) 5 hundred thousands = ..... ( 50000 , 500000 )  
 (b) 13 millions = ..... hundred thousands ( 130 , 3100000 )  
 (c) The number that 10 times 371 is ..... ( 371000 , 3710 )  
 (d) 345670 ( ..... ) 345000 ( > , = , < )  
 (e) 849000 = ..... thousands ( 849 , 8490 )  
 (f)  $\frac{1}{2}$  milliard = ..... ( 500000000 , 5000000000000 )

**6** Make a numerical form greater than **683200** and a numerical form less than **683200** Then write all three numerical forms in descending order :

Standard form	The descending order
Number : <b>683200</b>	.....
The greatest number : .....	.....
The smaller number : .....	.....

For more exercises follow Self- check on Syllabus in the second part

# Addition and Subtraction Strategies

Unit  
Tow



Associative	دمج
Algorithm	خوارزمية
Altogether	معًا
Big	أكبر
Bar model	نموذج شريطي
Commutative	إبدالي
Compose	تجميع
Calories	سعات حرارية
Column	عمود
Convert	يحول
Decompose	تحليل
Expected	متوقع
Equation	معادلة
Exact	المضبوط
Expanded form	صيغة ممتدة
Front-end	القيمة العليا
Fewest	الأقل
Graph	رسم
Greater than	أكبر من

Identity	محايد
Key	مفتاح
Least	أصغر
Less than	أقل من
Most	الأكثر
Numeral form	صيغة رقمية
Problem	مشكلة
Part	جزئ
Pharaonic	فرعوني
Population	عدد السكان
Person	شخص
Present	حاضرون
Special number	عدد مميز
Symbol	رمز
Trousers	بنطال
Skip Counting	العد بالتخطي
Variables	متغير
Visitors	زوار

## Content

Exercise  
inspired from  
Math Journal

Exercise  
on lessons

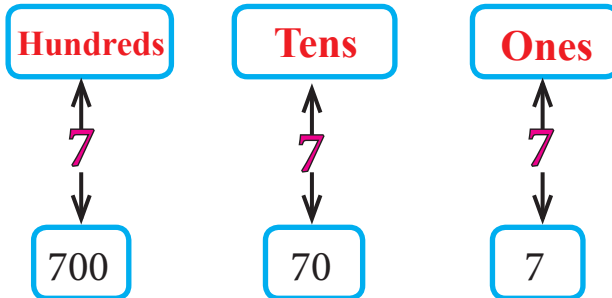
Self-Check  
on the unit

# Properties of Addition

## Lesson

### 1

**Activity 1** Note the value of the number **7** according to its place value :



**Note :**

- The number zero is to save the place
- The value of the number **7** changes due to the number of zeros in front of it

**Practice 1** Read the numerical form as extended form then write them in standard form :

**Solution**

- $3\ 000 + 400 + 20 + 8$
- $8\ 000 + 900 + 10$
- $600\ 000 + 30\ 000 + 9\ 000 + 800$
- $1\ 000\ 000\ 000 + 8\ 000\ 000 + 5\ 000$

**a** 3 428

**b** .....

**c** .....

**d** .....

**From the above we note that :**

- The value of the number **8** changes due to the number of zeros to the right of it
- The value of a number increases as the number of zeros to the right of it increases

**Practice 2** Write the extended form for the following numbers, then note the value of the number **6** :

- 1536** = .....
- 12467** = .....
- 206705** = .....
- 1760321** = .....
- 36002570** = .....



## Properties of the addition operation

### 1 Additive identity Property

(a)  $0 + 5 = 5$  ,  $5 + 0 = 5$

(b)  $0 + 718 = 718$  ,  $718 + 0 = 718$

**Note :**  Zero + number = same number + zero = same number


**Practice 3** Use the property of the additive identity element to solve the following problems, and what do you notice?

(a)  $0 + 2\,345 = \dots\dots\dots$  ,  $2\,345 + 0 = \dots\dots\dots$

**So**  $2\,345 + \dots\dots\dots = \dots\dots\dots + 2\,345 = 2\,345$

(b)  $0 + 12\,567\,109 = \dots\dots\dots$  ,  $12\,567\,109 + 0 = \dots\dots\dots$

**So**  $12\,567\,109 + \dots\dots\dots = \dots\dots\dots + 12\,567\,109 = 12\,567\,109$

**Note :**  The subtraction operation has no identity  
**then :**  $6 - 0$  not equal  $0 - 6$

### 2 Commutative property

(a)  $3 + 5 = 8$  ,  $5 + 3 = 8$

(b)  $142 + 26 = 168$  ,  $26 + 142 = 168$

**Note :**   $A + B = B + A$

**Practice 4** Use the commutative property to solve the following problems:

(a)  $4 + 7 + 6 = 4 + 6 + \dots\dots\dots = 10 + \dots\dots\dots = \dots\dots\dots$

(b)  $3 + 8 + 7 + 2 = 3 + 7 + 8 + \dots\dots\dots = \dots\dots\dots + \dots\dots\dots = \dots\dots\dots$

## Unit 2

**Practice 5** Use the commutative property to solve the following problems, and what do you notice?

(a)  $5 + 8 + 7 + 3$   
.....

(b)  $5 + 3 + 7 + 8$   
.....

(c)  $3 + 8 + 5 + 7$   
.....

(d)  $7 + 8 + 3 + 5$   
.....

**Note :** The addend are the same but in different order,  
the sum of each problem is .....

**Note :**



Subtraction is not a commutative operation  
because :  $5 - 3$  not equal  $3 - 5$

### 3 Associative property

Remember we add the parentheses first

**Activity 2** Note the associative property :

(a)  $2 + 3 + 7$   
.....  
**12**

(b)  $2 + (3 + 7)$   
.....

(c)  $(2 + 3) + 7$   
.....

**Note :** The added numbers are the same depending on the position  
of the parentheses, the sum of each problem is .....

**Practice 6** Use the associative property to solve the following problems :

(a)  $17 + 20 + (4 + 10)$   
.....

(b)  $17 + (20 + 4) + 10$   
.....

(c)  $(17 + 20) + 4 + 10$   
.....

**Note :** The added numbers are the same depending on the position  
of the parentheses, the sum of each problem is .....

**Note :**



Subtraction is not associative operation  
because :  $10 - 7 - 2$  not equal  $10 - (7 - 2)$

## Addition and Subtraction Strategies

**Practice 7** Solve problems, Circle the property used , as Ex :

The property			Write by yourself
Ex    Associative <u>Commutative</u> Additive identity	$13 + 20 + 15$ $\dots 48 \dots$	$20 + 15 + 13$ $\dots 48 \dots$	$\dots 48 \dots$
Associative Commutative Additive identity	$4502 + 0$ $\dots \dots \dots$	$0 + 4502$ $\dots \dots \dots$	$\dots \dots \dots$
Associative Commutative Additive identity	$36 + (21 + 40)$ $\dots \dots \dots$	$(36 + 21) + 40$ $\dots \dots \dots$	$\dots \dots \dots$
Associative Commutative Additive identity	$43 + 0 + 200$ $\dots \dots \dots$	$(43 + 0) + 200$ $\dots \dots \dots$	$\dots \dots \dots$

**Practice 8** Solve the problems and state the name of the property used (Additive identity element - Commutative - Associative) :

- (a)  $20 + 34 + 10 = 20 + 10 + 34 = \dots$  property :  $\dots$
- (b)  $40 + 37 + 13 = 40 + (37 + 13) = \dots$  property :  $\dots$
- (c)  $0 + 56248 = \dots$  property :  $\dots$
- (d)  $79 + 50 + 21 = 79 + \dots + 50$  property :  $\dots$   
 $= (79 + \dots) + 50$  property :  $\dots$   
 $= \dots + 50 = \dots$

## Self - check on lesson ( 1 )

**1** Convert the expanded form of a number to the standard form :

(a)  $5\,000\,000\,000 + 7\,000\,000 + 1\,000 =$  .....

(b)  $300\,000 + 3\,000 + 100 + 80 =$  .....

(c)  $100\,000 + 50\,000 + 4\,000 + 200 =$  .....

(d)  $500\,000 + 7\,000 + 600 + 40 + 9 =$  .....

**2** Write the expanded form for the following numbers and note the value of the number 7 :

(a) **9810376** = .....

(b) **27415** = .....

(c) **19708530** = .....

(d) **46000721** = .....

(e) **3754180** = .....

**3** Complete and write the used property :

(a)  $0 + 74\,183 =$  ..... property : .....

(b)  $80 + 91 + 20 =$  ..... property : .....

(c)  $(7 + 43) + 30 =$  ..... property : .....

(d)  $46 + 32 + 24 =$  ..... property : .....

(e)  $1370092 + 0 =$  ..... property : .....

## 4 Complete the following :

- (a)  $93 + 65 = 65 + \dots$  property .....
- (b)  $1300 + \dots = \dots + 1300 = 1300$  property .....
- (c)  $58 + 60 + 22 = 58 + \dots + 60$  property .....  
 $= (58 + \dots) + 60$  property .....  
 $= \dots + 60 = \dots$  property .....
- (d)  $91 + 9 + \dots = (91 + \dots) + 10$  property .....  
 $= 100 + \dots = \dots$
- (e)  $63 + 55 + 137 + 345 = 63 + \dots + 55 + \dots$   
 $= (63 + \dots) + (55 + \dots)$   
 $= \dots + \dots = \dots$

## 5 Complete and write the used property :

	The property			Write by yourself
Ex	Associative Commutative Additive identity	$52\ 731 + 0$ .....	$0 + 52\ 731$ .....	$52\ 731$ .....
	Associative Commutative Additive identity	$22 + (27 + 30)$ .....	$(22 + 27) + 30$ .....	.....
	Associative Commutative Additive identity	$53 + 39 + 17$ .....	$39 + 53 + 17$ .....	.....

# Mental Math strategies

## Lesson

## 2

### 1 Estimation strategy through the front-end estimation :

(a) 
$$\begin{array}{r} 167 \rightarrow 100 \\ + \\ 83 \rightarrow 80 \\ \hline 180 \end{array}$$

(b) 
$$\begin{array}{r} 167 \rightarrow 100 \\ - \\ 83 \rightarrow 80 \\ \hline 20 \end{array}$$

(c) 
$$\begin{array}{r} 6180 \rightarrow 6000 \\ + \\ 3820 \rightarrow 3000 \\ \hline 9000 \end{array}$$

(d) 
$$\begin{array}{r} 6180 \rightarrow 6000 \\ - \\ 3820 \rightarrow 3000 \\ \hline 3000 \end{array}$$

**Remember :** The estimation may not be close to the actual result

**Practice 1** Find the result of the following using the strategy of estimating the number through front-end estimation :

(a) 
$$\begin{array}{r} 73 \rightarrow \dots \\ + \\ 18 \rightarrow \dots \\ \hline \dots \end{array}$$

(b) 
$$\begin{array}{r} 73 \rightarrow \dots \\ - \\ 18 \rightarrow \dots \\ \hline \dots \end{array}$$

(c) 
$$\begin{array}{r} 489 \rightarrow \dots \\ + \\ 134 \rightarrow \dots \\ \hline \dots \end{array}$$

(d) 
$$\begin{array}{r} 489 \rightarrow \dots \\ - \\ 134 \rightarrow \dots \\ \hline \dots \end{array}$$

(e) 
$$\begin{array}{r} 4510 \rightarrow \dots \\ + \\ 3100 \rightarrow \dots \\ \hline \dots \end{array}$$

(f) 
$$\begin{array}{r} 4510 \rightarrow \dots \\ - \\ 3100 \rightarrow \dots \\ \hline \dots \end{array}$$

(g) 
$$\begin{array}{r} 7777 \rightarrow \dots \\ + \\ 4000 \rightarrow \dots \\ \hline \dots \end{array}$$

(h) 
$$\begin{array}{r} 7777 \rightarrow \dots \\ - \\ 4000 \rightarrow \dots \\ \hline \dots \end{array}$$

## 2 Rounding strategy :

(a) 
$$\begin{array}{r} 93 \rightarrow 90 \text{ (to the nearest ten)} \\ + \\ 58 \rightarrow 60 \\ \hline 150 \end{array}$$

(b) 
$$\begin{array}{r} 93 \rightarrow 90 \text{ (to the nearest ten)} \\ - \\ 58 \rightarrow 60 \\ \hline 30 \end{array}$$

**Remember :** Rounding is somewhat more accurate than estimation

**Practice 1** Find the result of the following using the rounding strategy ( **to the nearest ten** ) :

(a) 
$$\begin{array}{r} 89 \rightarrow \dots \\ + \\ 63 \rightarrow \dots \\ \hline \end{array}$$

(b) 
$$\begin{array}{r} 89 \rightarrow \dots \\ - \\ 63 \rightarrow \dots \\ \hline \end{array}$$

**Practice 2** Find the result of the following using the rounding strategy ( **to the nearest hundred** ) :

(a) 
$$\begin{array}{r} 301 \rightarrow \dots \\ + \\ 170 \rightarrow \dots \\ \hline \end{array}$$

(b) 
$$\begin{array}{r} 301 \rightarrow \dots \\ - \\ 170 \rightarrow \dots \\ \hline \end{array}$$

(c) 
$$\begin{array}{r} 5893 \rightarrow \dots \\ + \\ 3340 \rightarrow \dots \\ \hline \end{array}$$

(d) 
$$\begin{array}{r} 5893 \rightarrow \dots \\ - \\ 3340 \rightarrow \dots \\ \hline \end{array}$$

**Practice 3** Find the result of the following using the rounding strategy ( **to the nearest thousand** ) :

(a) 
$$\begin{array}{r} 8200 \rightarrow \dots \\ + \\ 3920 \rightarrow \dots \\ \hline \end{array}$$

(b) 
$$\begin{array}{r} 8200 \rightarrow \dots \\ - \\ 3920 \rightarrow \dots \\ \hline \end{array}$$

(c) 
$$\begin{array}{r} 3614 \rightarrow \dots \\ + \\ 3205 \rightarrow \dots \\ \hline \end{array}$$

(d) 
$$\begin{array}{r} 3614 \rightarrow \dots \\ - \\ 3205 \rightarrow \dots \\ \hline \end{array}$$

## Unit 2

### 3 Composing and decomposing strategy :

(a)  $134 + 489 = (4 + 9) + (30 + 80) + (100 + 400)$   
 $= 13 + 110 + 500 = 13 + 610 = 623$

( Where we add ones with ones, tens with tens, hundreds with hundreds )

(b)  $89 - 47 = (9 - 7) + (80 - 40) = 2 + 40 = 42$

( Where we subtract ones from ones , tens from tens, hundreds from hundreds )

**Practice 5** Find the result of the following using composing and decomposing strategy :

(a)  $537 + 208$

( Where we add ones with ones, tens with tens, hundreds with hundreds )

**Solution :**  $537 + 208 = \dots\dots\dots$

(b)  $97 - 26$

( Where we subtract ones from ones , tens from tens )

**Solution :**  $97 - 26 = \dots\dots\dots$

### 4 Replacing strategy (to obtain a special numerical value) :

(a)  $304 + 399 = 304 + (400 - 1)$   
 $= (304 + 400) - 1 = 704 - 1 = 703$

Replacing 399 by the special number ( 400 - 1 )

Another way to solve the same strategy :

$$304 + 399 = 303 + 1 + 399$$
$$= (303 + 400) = 703$$

Replacing 304 by the special number ( 303 + 1 )



$$\begin{aligned} \textcircled{b} \quad 504 + 198 &= 504 + 200 - 2 \\ &= (504 + 200) - 2 = 704 - 2 = 702 \end{aligned}$$

Replacing 198 by the special number (200 - 2)

$$\begin{aligned} \textcircled{c} \quad 75 + 27 &= 75 + 25 + 2 \\ &= (75 + 25) + 2 = 100 + 2 = 102 \end{aligned}$$

Replacing 27 by the special number (25 + 2)

$$\begin{aligned} \textcircled{d} \quad 92 - 39 &= 92 - 40 + 1 \\ &= (92 - 40) + 1 = 52 + 1 = 53 \end{aligned}$$

Replacing 39 subtract the special number (40) then add (1)

$$\begin{aligned} \textcircled{e} \quad 953 - 499 &= 953 - 500 + 1 \\ &= (953 - 500) + 1 = 453 + 1 = 454 \end{aligned}$$

Replacing 499 subtract the special number (500) then add (1)

**Practice 6** Use replacing strategy (to obtain a special numerical value) :

$$\begin{aligned} \textcircled{a} \quad 22 + 59 &= (22 + 60) - \dots\dots\dots \\ &= \dots\dots\dots - \dots\dots\dots = \dots\dots\dots \end{aligned}$$

$$\begin{aligned} \textcircled{b} \quad 175 + 24 &= (175 + 25) - \dots\dots\dots \\ &= \dots\dots\dots - \dots\dots\dots = \dots\dots\dots \end{aligned}$$

$$\begin{aligned} \textcircled{c} \quad 156 - 49 &= (156 - 50) + \dots\dots\dots \text{ subtract the special number} \\ &\hspace{15em} (50) \text{ then add (1)} \\ &= \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \end{aligned}$$

$$\begin{aligned} \textcircled{d} \quad 802 - 103 &= (802 - 102) - \dots\dots\dots \\ &= \dots\dots\dots - \dots\dots\dots = \dots\dots\dots \end{aligned}$$

## Unit 2

5 Counting up strategy (from the least number to the big number) :

a  $92 - 67$

**Solution :** start from the least 67

It will be  $67 + 3 = 70$  then  $70 + 2 = 72$  then  $72 + 20 = 92$

Then add  $3 + 2 + 20 = 25$  So  $92 - 67 = 25$

b  $785 - 770$

**Solution :** start from the least 770

It will be  $770 + 5 = 775$  then  $775 + 10 = 785$

Then add  $5 + 10 = 15$  So  $785 - 770 = 15$

**Practice 7** Counting up strategy  
(from the small number to the big number) :

a  $675 - 659 = \dots\dots\dots$

**Solution :** start from the small  $\dots\dots\dots$

b  $148 - 135 = \dots\dots\dots$

**Solution :** start from the small  $\dots\dots\dots$

**Practice 8** Find the result of the following using one strategy :

Problem	Chosen mental arithmetic strategy	Solution
$29 + 17$		
$92 - 11$		
$101 - 98$		
$76 - 68$		
$17 + 83$		

## Self - check on lesson (2)

**1** Find the result of the following using the strategy of estimating the number use front-end estimation :

(a) 
$$\begin{array}{r} 79 \rightarrow \dots \\ + \quad \quad + \\ 14 \rightarrow \dots \\ \hline \end{array}$$

(b) 
$$\begin{array}{r} 79 \rightarrow \dots \\ - \quad \quad - \\ 14 \rightarrow \dots \\ \hline \end{array}$$

(c) 
$$\begin{array}{r} 330 \rightarrow \dots \\ + \quad \quad + \\ 215 \rightarrow \dots \\ \hline \end{array}$$

(d) 
$$\begin{array}{r} 330 \rightarrow \dots \\ - \quad \quad - \\ 215 \rightarrow \dots \\ \hline \end{array}$$

(e) 
$$\begin{array}{r} 5235 \rightarrow \dots \\ + \quad \quad + \\ 1212 \rightarrow \dots \\ \hline \end{array}$$

(f) 
$$\begin{array}{r} 5235 \rightarrow \dots \\ - \quad \quad - \\ 1212 \rightarrow \dots \\ \hline \end{array}$$

**2** Find the result of the following using the rounding strategy (to the nearest hundred) :

(a) 
$$\begin{array}{r} 357 \rightarrow \dots \\ + \quad \quad + \\ 138 \rightarrow \dots \\ \hline \end{array}$$

(b) 
$$\begin{array}{r} 357 \rightarrow \dots \\ - \quad \quad - \\ 138 \rightarrow \dots \\ \hline \end{array}$$

(c) 
$$\begin{array}{r} 82690 \rightarrow \dots \\ + \quad \quad + \\ 71105 \rightarrow \dots \\ \hline \end{array}$$

(d) 
$$\begin{array}{r} 82690 \rightarrow \dots \\ - \quad \quad - \\ 71105 \rightarrow \dots \\ \hline \end{array}$$

(e) 
$$\begin{array}{r} 8650 \rightarrow \dots \\ + \quad \quad + \\ 7341 \rightarrow \dots \\ \hline \end{array}$$

(f) 
$$\begin{array}{r} 8650 \rightarrow \dots \\ - \quad \quad - \\ 7341 \rightarrow \dots \\ \hline \end{array}$$

## Unit 2

**3** Find the result of the following using one strategy as the **Ex** :

Problem	Chosen mental arithmetic strategy	Solution
$32 + 169$	Replacing to get special value	$31 + 1 + 169$ $= 31 + 170$ $= 201$
$802 - 789$	Count up	
$89 + 64$	Compose and Decompose	
$44 - 24$	Replacing to get special value	
$654 - 233$	Compose and Decompose	
$303 + 327$	Replacing to get special value	
$872 - 341$	Compose and Decompose	
$9128 - 1016$	Compose and Decompose	

# Addition with Regrouping

Lesson

3

**Activity 1** Note the following :

(a)  $82 + 16$

$$\begin{array}{r} 82 \\ + 16 \\ \hline \end{array}$$

Estimate strategy number  
use front-end estimation

$$\begin{array}{r} 82 \\ + 16 \\ \hline \end{array}$$

Rounding strategy  
to the nearest 10

**Actual answer :**  $82 + 16 = \dots\dots\dots$

(b)  $8649 + 6130$

$$\begin{array}{r} 8649 \\ + 6130 \\ \hline \end{array}$$

Estimate strategy  
number use front-end  
estimation

$$\begin{array}{r} 8649 \\ + 6130 \\ \hline \end{array}$$

Rounding strategy  
to the nearest 1000

**Actual answer :**  $8649 + 6130 = \dots\dots\dots$

**Activity 2** Use compose and decompose property find the following :

$$\begin{aligned} 217 + 168 &= (200 + 100) + (10 + 60) + (7 + 8) \\ &= (300) + (70) + (15) \\ &= 300 + 70 + 10 + 5 = \dots\dots\dots = 385 \end{aligned}$$

Using the place value table :

Ones		
Hundred	Tens	Ones
2	1	7
1	6	8
3	7	15

15 Ones = 1 ten , 5 Ones

Ones		
Hundred	Tens	Ones
2	1	7
1	6	8
3	8	5

Maths

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## Unit 2

**Practice 1** Find the result of the following  
(Using the standard summation algorithm) as examples :

$$\begin{array}{r} \textcircled{1} \\ 3\ 2\ 4\ 6 \\ +\ 1\ 5\ 1\ 5 \\ \hline 4\ 7\ 6\ 1 \end{array}$$

$$\begin{array}{r} \textcircled{1}\ \textcircled{1} \\ 6\ 2\ 7\ 4 \\ +\ 1\ 6\ 5\ 8 \\ \hline 7\ 9\ 3\ 2 \end{array}$$

$$\begin{array}{r} \textcircled{1}\ \textcircled{1}\ \textcircled{1} \\ 4\ 9\ 5\ 9 \\ +\ 2\ 0\ 7\ 5 \\ \hline 7\ 0\ 3\ 4 \end{array}$$

$$\begin{array}{r} 4\ 7\ 5\ 3\ 1\ 8 \\ +\ 1\ 0\ 2\ 9\ 4\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 2\ 3\ 6\ 5\ 0\ 1 \\ +\ 7\ 3\ 6\ 4\ 5\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 1\ 8\ 3\ 2\ 9\ 4 \\ +\ 1\ 6\ 2\ 4\ 8\ 0 \\ \hline \end{array}$$

$$\begin{array}{r} 2\ 4\ 0\ 0\ 6\ 5 \\ +\ 5\ 2\ 4\ 9\ 7\ 4 \\ \hline \end{array}$$

$$\begin{array}{r} 6\ 7\ 5\ 2\ 7\ 1 \\ +\ 1\ 1\ 2\ 0\ 4\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 1\ 3\ 8\ 2\ 5\ 4 \\ +\ 7\ 0\ 0\ 9\ 5\ 0 \\ \hline \end{array}$$

**Practice 2** Find the result of the following :

Another way to perform addition : (Horizontal method)

(a)  $240065 + 403070 = \dots\dots\dots$

(b)  $172976 + 909040 = \dots\dots\dots$

(c)  $1729760 + 9909040 = \dots\dots\dots$

## Addition and Subtraction Strategies

**Practice 3** Ants builds two bridges. The first bridge consists 142 ants, The second consists 165 ants.  
What is the number of ants required for both bridges?  
Explain solution's steps, (Check if your answer is reasonable)

**Solution**

**Actual result**

$$142 + 165 = \dots\dots\dots$$

**To the nearest 10**

$$\begin{array}{r} 142 \rightarrow \dots\dots \\ + \quad \quad + \\ 165 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

**To the nearest 100**

$$\begin{array}{r} 142 \rightarrow \dots\dots \\ + \quad \quad + \\ 165 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$



**Practice 4** An ant moves 855 mm per second. after 2 seconds.  
What is the distance that the ant will travel ?  
( Check if your answer is reasonable )

**Solution**

**Actual result**

$$855 + 855 = \dots\dots\dots$$

**To the nearest 10**

$$\begin{array}{r} 855 \rightarrow \dots\dots \\ + \quad \quad + \\ 855 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

**To the nearest 100**

$$\begin{array}{r} 855 \rightarrow \dots\dots \\ + \quad \quad + \\ 855 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$



**Practice 5** Ehab and Abeer travel from Aswan to Alexandria and will travel 383 km on the first day to Assiut, and they will travel 462 km from Assiut to Alexandria on the second day.  
How many kilometres will they travel in the two days?  
(Check if your answer is reasonable )

**Solution**

**Actual result**

$$383 + 462 = \dots\dots\dots$$

**To the nearest 10**

$$\begin{array}{r} 383 \rightarrow \dots\dots \\ + \quad \quad + \\ 462 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

**To the nearest 100**

$$\begin{array}{r} 383 \rightarrow \dots\dots \\ + \quad \quad + \\ 462 \rightarrow \dots\dots \\ \hline \dots\dots \end{array}$$

## Self - check on lesson (3)

1 Find the result of the following :

$$\begin{array}{r} 4089 \\ + 4501 \\ \hline \end{array}$$

$$\begin{array}{r} 1234 \\ + 2865 \\ \hline \end{array}$$

$$\begin{array}{r} 20207 \\ + 19793 \\ \hline \end{array}$$

$$\begin{array}{r} 1006 \\ + 6004 \\ \hline \end{array}$$

$$\begin{array}{r} 4444 \\ + 5556 \\ \hline \end{array}$$

$$\begin{array}{r} 20207 \\ + 11095 \\ \hline \end{array}$$

$$\begin{array}{r} 24647 \\ + 15402 \\ \hline \end{array}$$

$$\begin{array}{r} 9031 \\ + 1919 \\ \hline \end{array}$$

$$\begin{array}{r} 13657 \\ + 33407 \\ \hline \end{array}$$

$$\begin{array}{r} 3043 \\ + 2059 \\ \hline \end{array}$$

$$\begin{array}{r} 21295 \\ + 33305 \\ \hline \end{array}$$

$$\begin{array}{r} 6565 \\ + 1451 \\ \hline \end{array}$$



**2** Find the result of the following :

$$\begin{array}{r} 345678 \\ + 246113 \\ \hline \end{array}$$

$$\begin{array}{r} 258369 \\ + 137052 \\ \hline \end{array}$$

$$\begin{array}{r} 852741 \\ + 123456 \\ \hline \end{array}$$

$$\begin{array}{r} 1593572 \\ + 2682488 \\ \hline \end{array}$$

$$\begin{array}{r} 2015735 \\ + 3265145 \\ \hline \end{array}$$

$$\begin{array}{r} 5913750 \\ + 1346799 \\ \hline \end{array}$$

$$\begin{array}{r} 19291381 \\ + 50328451 \\ \hline \end{array}$$

$$\begin{array}{r} 43491475 \\ + 37218621 \\ \hline \end{array}$$

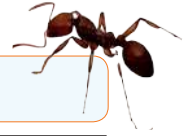
$$\begin{array}{r} 25135579 \\ + 61434780 \\ \hline \end{array}$$

$$\begin{array}{r} 123654123 \\ + 364521908 \\ \hline \end{array}$$

$$\begin{array}{r} 423105608 \\ + 203450295 \\ \hline \end{array}$$

$$\begin{array}{r} 612304515 \\ + 130790625 \\ \hline \end{array}$$

## Unit 2



**3** Complete the table then answer the following :

Number of ants			
	Type	Amount	To the nearest 1000
1	Black garden ants	58712	.....
2	Pavement ants	81475	.....
3	Pharaonic ants	42358	.....

- a** How many ants would you have if you collected pharaonic ants and pavement ants? Use the numbers rounded from the table to estimate and then find the exact answer .

**To the nearest 1000**

$$\begin{array}{r}
 42358 \rightarrow \dots\dots\dots \\
 + 81475 \rightarrow + \dots\dots\dots \\
 \hline
 \dots\dots\dots
 \end{array}$$

**exact result**

$$\begin{array}{r}
 42358 \\
 + 81475 \\
 \hline
 \dots\dots\dots
 \end{array}$$

- b** How many ants would you have if you combined sidewalk Ants and black garden ants? Use the rounded numbers from the table to estimate and then find the exact answer

**To the nearest 1000**

$$\begin{array}{r}
 81475 \rightarrow \dots\dots\dots \\
 + 58712 \rightarrow + \dots\dots\dots \\
 \hline
 \dots\dots\dots
 \end{array}$$

**exact result**

$$\begin{array}{r}
 81475 \\
 + 58712 \\
 \hline
 \dots\dots\dots
 \end{array}$$

- c** What is the total number of all ants? Use the numbers rounded from the table to estimate and then find the exact answer .

**To the nearest 1000**

$$\begin{array}{r}
 58712 \rightarrow \dots\dots\dots \\
 + 81475 \rightarrow + \dots\dots\dots \\
 + 42358 \rightarrow + \dots\dots\dots \\
 \hline
 \dots\dots\dots
 \end{array}$$

**exact result**

$$\begin{array}{r}
 58712 \\
 + 81475 \\
 + 42358 \\
 \hline
 \dots\dots\dots
 \end{array}$$

# Subtraction Strategies - Subtraction with Regrouping

Lesson

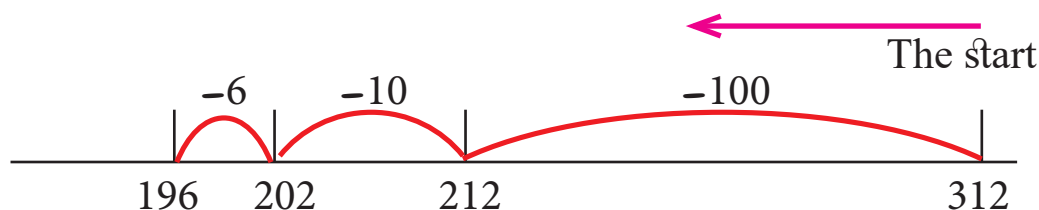
4, 5

1 Counting decreasingly with decomposing numbers :

Activity 1 Find the result of  $312 - 116$  :

- Draw a number line without markings.
- We write the subtracted number (**the largest**) at the right end of the line.
- Counting down from the subtracted number using the expanded form of the subtraction (  $100 + 10 + 6$  ) .

then :  $312 - 116 =$  the number that we get  $= 196$



Practice 1 Find the result of the following using the count back Strategy with decomposing number :

a

$\begin{array}{r} 734 \\ - 223 \\ \hline \end{array}$	
---	--

b

$\begin{array}{r} 6645 \\ - 2400 \\ \hline \end{array}$	
---	--

c

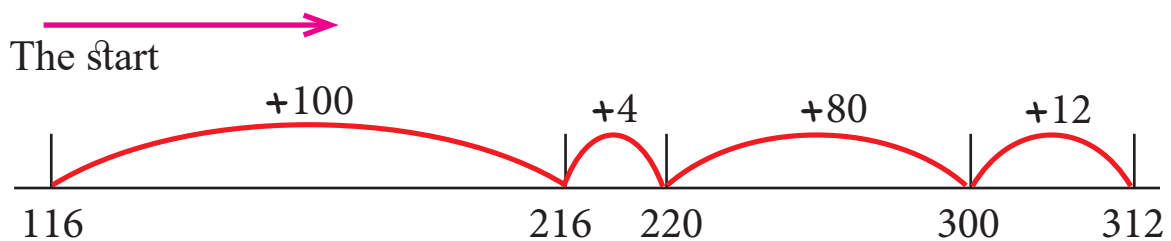
$\begin{array}{r} 839 \\ - 131 \\ \hline \end{array}$	
---	--

## Unit 2

### 2 Counting up strategy with decomposing number :

#### Activity 2 Find the result of $312 - 116$ :

- Draw a number line without markings.
- We write the subtraction (the smallest) at the left end of the line .
- Counting from the subtraction to the subtracted number .



Then :  $312 - 116 = \text{all the sums} = 100 + 4 + 80 + 12 = 196$

#### Practice 2 Find the result of the following using the strategy of Counting upwards with decomposition of numbers :

a

340	
- 204	
<hr/>	

204

b

432	
- 127	
<hr/>	

127




c

789	
- 310	
<hr/>	

310






## Activity 3 Use the drawing strategy to show $428 - 153$ :

The number 428

Ones		
Hundred	Tens	Ones
		

 = 10 

1 hundred = 10 ten

Ones		
Hundred	Tens	Ones
	  	
1	5	3
2	7	5

$$\begin{array}{r} 3 \quad 12 \\ 428 \\ - 153 \\ \hline 275 \end{array}$$

## Activity 4 Find the result of the following using the standard subtraction algorithm :

a

$$\begin{array}{r} 8 \quad 16 \\ 596 \\ - 227 \\ \hline 369 \end{array}$$

b

$$\begin{array}{r} 3 \quad 18 \\ 8 \quad 15 \\ 495 \\ - 196 \\ \hline 299 \end{array}$$

c

$$\begin{array}{r} 6 \quad 10 \quad 18 \\ 0 \quad 8 \quad 14 \\ 7194 \\ - 4295 \\ \hline 2899 \end{array}$$

## Practice 3

Checking the possibility of the previous results using the rounding strategy to the nearest hundred :

a

$$\begin{array}{r} 600 \\ - 200 \\ \hline 400 \end{array}$$

b

$$\begin{array}{r} 500 \\ - 200 \\ \hline 300 \end{array}$$

c

$$\begin{array}{r} 6 \quad 12 \\ 7 \quad 2 \quad 00 \\ - 4 \quad 3 \quad 00 \\ \hline 2 \quad 9 \quad 00 \end{array}$$

## Unit 2

**Practice 4** find the following :

$$\begin{array}{r} 3832 \\ - 1809 \\ \hline \end{array}$$

$$\begin{array}{r} 1513 \\ - 1204 \\ \hline \end{array}$$

$$\begin{array}{r} 5734 \\ - 1151 \\ \hline \end{array}$$

$$\begin{array}{r} 4444 \\ - 1621 \\ \hline \end{array}$$

$$\begin{array}{r} 2858 \\ - 1909 \\ \hline \end{array}$$

$$\begin{array}{r} 3031 \\ - 1122 \\ \hline \end{array}$$

$$\begin{array}{r} 475312 \\ - 102145 \\ \hline \end{array}$$

$$\begin{array}{r} 936501 \\ - 736459 \\ \hline \end{array}$$

$$\begin{array}{r} 583294 \\ - 162480 \\ \hline \end{array}$$

$$\begin{array}{r} 345678 \\ - 246113 \\ \hline \end{array}$$

$$\begin{array}{r} 258369 \\ - 137052 \\ \hline \end{array}$$

$$\begin{array}{r} 852741 \\ - 123456 \\ \hline \end{array}$$

**Practice**

**5**

Solve the following problems using the standard Subtraction algorithm strategy ,then round each number to the nearest thousand to check the possibility of the answer, as the **Ex** :

**a**

$$17525 - 13708 = \dots\dots\dots$$

**Solution :**  $17525 - 13708 = 3817$

**Make sure** ( rounding to 1000 ) =  $18000 - 14000 = \dots\dots\dots$

**b**

$$431925 - 204835 = \dots\dots\dots$$

**Solution :**  $431925 - 204835 = \dots\dots\dots$

**Make sure** ( rounding to 1000 ) =  $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$

**c**

$$61851 - 52670 = \dots\dots\dots$$

**Solution :**  $61851 - 52670 = \dots\dots\dots$

**Make sure** ( rounding to 1000 ) =  $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$

**Practice**

**6**

An ant wanted to cross the river, which was **3548** cm wide. The ant had already swam **1672** cm. What is the remaining distance that the ant should swim ?

**Solution :** remaining distance =  $3548 - 1672 = \dots\dots\dots$  cm

**Make sure** ( rounding to 1000 ) =  $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$  cm

**Practice**

**7**

The first colony of ants had about **1267** ants. The second colony has **3452** ants. How many ants in the first colony are less than the number of ants in the second colony ?



**Solution :** the increase =  $3452 - 1267 = \dots\dots\dots$

**Make sure** (rounding to 1000 ) =  $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$

## Self-check on lesson (4, 5)

1 Find the result :

$$\begin{array}{r} 8327 \\ - 5029 \\ \hline \end{array}$$

$$\begin{array}{r} 4974 \\ - 2883 \\ \hline \end{array}$$

$$\begin{array}{r} 6540 \\ - 2727 \\ \hline \end{array}$$

$$\begin{array}{r} 3804 \\ - 1105 \\ \hline \end{array}$$

$$\begin{array}{r} 4012 \\ - 3021 \\ \hline \end{array}$$

$$\begin{array}{r} 9122 \\ - 1038 \\ \hline \end{array}$$

$$\begin{array}{r} 7593572 \\ - 2682488 \\ \hline \end{array}$$

$$\begin{array}{r} 5015735 \\ - 3265145 \\ \hline \end{array}$$

$$\begin{array}{r} 4913750 \\ - 2346799 \\ \hline \end{array}$$

$$\begin{array}{r} 69291381 \\ - 30328451 \\ \hline \end{array}$$

$$\begin{array}{r} 43491475 \\ - 37218621 \\ \hline \end{array}$$

$$\begin{array}{r} 85135579 \\ - 61434780 \\ \hline \end{array}$$



**2** Using the standard subtraction algorithm strategy to solve the problem then round each number to the nearest **1000** to check the possibility of the answer, as in (a) :

<p>(a)</p> $\begin{array}{r} 6625 \\ - 4417 \\ \hline 2208 \end{array}$	<p>to the nearest 1000</p> <p>→</p>	$\begin{array}{r} 7000 \\ - 4000 \\ \hline 3000 \end{array}$
<p>(b)</p> $\begin{array}{r} 23640 \\ - 14635 \\ \hline \end{array}$ <p>.....</p>	<p>to the nearest 1000</p> <p>→</p>	<p>.....</p> <p>-</p> <p>.....</p> <p>.....</p>
<p>(c)</p> $\begin{array}{r} 25884 \\ - 18875 \\ \hline \end{array}$ <p>.....</p>	<p>to the nearest 1000</p> <p>→</p>	<p>.....</p> <p>-</p> <p>.....</p> <p>.....</p>
<p>(d)</p> $\begin{array}{r} 1816 \\ - 1066 \\ \hline \end{array}$ <p>.....</p>	<p>to the nearest 1000</p> <p>→</p>	<p>.....</p> <p>-</p> <p>.....</p> <p>.....</p>

**3** What is the increase of **15 422 140** than **6 350 300** ?

**Solution :** the increase =  $15\,422\,104 - 6\,350\,300 = \dots\dots\dots$

**Make sure** ( to the nearest million ) =  $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$

**4** A bakery sold **1232** pieces of dumplings in one day. If the bakery sold **876** pieces of dumplings in the morning, how many pieces of dumplings were sold during the rest of the day?

**Solution :** The number sold =  $1232 - 876 = \dots\dots\dots$

**Make sure**( to the nearest 100 ) =  $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$

## Bar models and variables and Story Problems

### Lesson

### 6

**Variable** It is a symbol used to save the digits of the number, so symbols are used as variables to represent the missing number in the equations .

**Activity 1** Note the following :

- (a)  $3 + Y = 7$       then  $Y = 4$       so  $3 + 4 = 7$   
(b)  $X - 3 = 5$       then  $X = 8$       so  $8 - 3 = 5$   
(c)  $4 \times Y = 28$       then  $Y = 7$       so  $4 \times 7 = 28$   
(d)  $X \div 7 = 2$       then  $X = 14$       so  $14 \div 7 = 2$

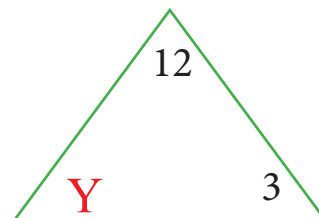
**Practice 1** Calculate the value of  $X$  in each of the following :

- (a)  $7 \times X = 35$  then  $X = \dots\dots$       (b)  $X + 12 = 15$  then  $X = \dots\dots$   
(c)  $10 \div X = 5$  then  $X = \dots\dots$       (d)  $X - 7 = 10$  then  $X = \dots\dots$

**Activity 2** Calculate the value of  $Y$  in each of the following :

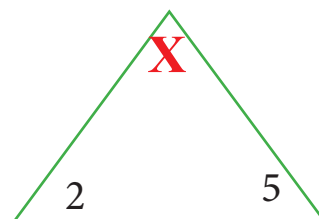
This triangle can express

- (a) Subtraction :  $Y = 12 - 3 = 9$   
(b) Division :  $Y = 12 \div 3 = 4$



**Practice 2** What is the possible value of  $X$  if the triangle expresses :

- (a) Addition :  $X = 5 + 2 = \dots\dots\dots$   
(b) Multiplication :  $X = 5 \times 2 = \dots\dots\dots$



## Activity 3 Know that Bar model :

### Bar model

Total	
Part	Part

**Practice 3** Write the equation and find the value of the variable in each case, as the **example** :

Y	
5	3

Equation :  $3 + 5 = Y$

Solution :  $Y = 8$

6	
X	4

Equation : .....

Solution : .....

20	
13	X

Equation : .....

Solution : .....

Y	
200	500

Equation : .....

Solution : .....

365	
Y	165

Equation : .....

Solution : .....

300	
200	X

Equation : .....

Solution : .....

X	
351	243

Equation : .....

Solution : .....

Y	
3750	750

Equation : .....

Solution : .....

# Unit 2

The sum

Remember



**Practice 4** Answer the following as the Ex :

Total	
Part	Part

Equation	Bar model				
<p>(a) <math>14000 - Y = 6000</math></p> <p><math>Y = 14000 - 6000 = 8000</math></p>	<table border="1"> <tr> <td colspan="2">14000</td></tr> <tr> <td>6000</td><td>Y</td></tr> </table>	14000		6000	Y
14000					
6000	Y				
<p>(b) <math>725625 + X = 935075</math></p> <p><math>X = \dots\dots\dots</math></p>	<table border="1"> <tr> <td colspan="2"></td></tr> <tr> <td>X</td><td></td></tr> </table>			X	
X					
<p>(c) <math>L - 53500 = 75200</math></p> <p><math>L = \dots\dots\dots</math></p>	<table border="1"> <tr> <td colspan="2">L</td></tr> <tr> <td></td><td></td></tr> </table>	L			
L					
<p>(d) <math>13280 - X = 8420</math></p> <p><math>X = \dots\dots\dots</math></p>	<table border="1"> <tr> <td colspan="2"></td></tr> <tr> <td>X</td><td></td></tr> </table>			X	
X					
<p>(e) <math>M + 205925 = 810775</math></p> <p><math>M = \dots\dots\dots</math></p>	<table border="1"> <tr> <td colspan="2"></td></tr> <tr> <td></td><td>M</td></tr> </table>				M
	M				

**Activity 4** There are **5328** ants in the colony, there are **2164** female ants, the rest are male.  
How many male ants in the colony?



**Bar model**

**Equation :**  $2164 + X = 5328$


**Solution :**  $X = 5328 - 2164 = 3164$  ants

5328	
X	2164

**Practice 5** There are **20000** ants in the colony, of which **12000** ants came out. How many ants are still inside the colony?

**Equation :** .....

**Solution :** .....

**Practice 6** Answer the following :

- a** **Omar** counted **1025** ants in colony (A) on Wednesday, and on Friday **101** ants left the colony.  
How many ants are still in the colony (A) ?



**Equation :** .....

**Solution :** .....


- b** **Mariam** counted **1555** in colony (B).  
How many ants did **Mariam** count in her colony more than the number that **Omar** counted?



**Equation :** .....

**Solution :** .....


## Self - check on lesson ( 6 )

- 1** Write the equation and find the value of the variable in each equation :

Bar model	The equation and the value of the variable				
<p>a</p> <table border="1"> <tr> <td colspan="2">X</td> </tr> <tr> <td>123</td> <td>375</td> </tr> </table>	X		123	375	<p>Equation :</p> <p>.....</p> <p>X = .....</p>
X					
123	375				
<p>b</p> <table border="1"> <tr> <td colspan="2">352</td> </tr> <tr> <td>43</td> <td>Y</td> </tr> </table>	352		43	Y	<p>Equation :</p> <p>.....</p> <p>Y = .....</p>
352					
43	Y				
<p>c</p> <table border="1"> <tr> <td colspan="2">604</td> </tr> <tr> <td>L</td> <td>305</td> </tr> </table>	604		L	305	<p>Equation :</p> <p>.....</p> <p>L = .....</p>
604					
L	305				
<p>d</p> <table border="1"> <tr> <td colspan="2">462</td> </tr> <tr> <td>Y</td> <td>207</td> </tr> </table>	462		Y	207	<p>Equation :</p> <p>.....</p> <p>Y = .....</p>
462					
Y	207				
<p>e</p> <table border="1"> <tr> <td colspan="2">511</td> </tr> <tr> <td>368</td> <td>X</td> </tr> </table>	511		368	X	<p>Equation :</p> <p>.....</p> <p>X = .....</p>
511					
368	X				

The sum

**2** Find the value of the variable in each equation :

Total	
Part	Part

Equation	Bar model
<p>(a) <math>245371 + \mathbf{X} = 676151</math></p> <p><math>\mathbf{X} = \dots\dots\dots</math></p>	
<p>(b) <math>29315 - \mathbf{Y} = 12084</math></p> <p><math>\mathbf{Y} = \dots\dots\dots</math></p>	
<p>(c) <math>\mathbf{X} + 614000 = 999644</math></p> <p><math>\mathbf{X} = \dots\dots\dots</math></p>	
<p>(d) <math>300154 + 10316 = \mathbf{Y}</math></p> <p><math>\mathbf{Y} = \dots\dots\dots</math></p>	
<p>(e) <math>\mathbf{X} - 333000 = 100458</math></p> <p><math>\mathbf{X} = \dots\dots\dots</math></p>	

## Unit 2

- 3** Ahmed had 1000 pounds, he bought trousers for 453 pounds, how much did he have left?

Equation : .....

Solution : .....

	Y

- 4** Mohammed sold his car for 516750 pounds and sold his house for 153446 pounds.  
What is the amount with Mohammed?

Equation : .....

Solution : .....

X	

- 5** An ant colony has 4 million ants. 3 million, 152 thousand and 700 ants went out .  
How many ants are left inside?



Equation : .....

Solution : .....

	Y

- 6** What number do we add to the number 153 thousand so that the result is two hundred thousand.

Equation : .....

Solution : .....

X	



## Solving Multistep Story Problems with Addition and Subtraction

### Lesson

### 7

Practice

1

Aisha counted 1725 pharaonic ants in Colony A on Monday. 22750 ants on Tuesday, and 6075 ants on Wednesday. How many ants counted by Aisha?  
Aisha knew that Omar checked 50750 ants in colony A. How many ants does Aisha still need to count in order to count all the ants in the colony?

**Solution :** Number she counted = ..... + ..... + ..... = .....  
Number she need = 50750 - ..... = .....

Practice

2

The Suez Canal extends from Port Said to the city of Suez 193120 metres. If a boat travels 64370 meters Everyday for a period of 3 days, how many meters are left to reach the end of the canal?

**Solution :** Distance in 3 days = ..... + ..... + .....  
= .....

Number of metres = 193120 - ..... = .....

Practice

3

Salma was counting ants in colony A. She counted 1525 ants on Monday, 19750 ants on Tuesday, and 3705 ants on Wednesday.  
If there are 30520 ants in colony A,  
How many ants do you still need to count?



**Solution :** Number Salma counted = ..... + ..... + ..... = .....  
Number she need = ..... - ..... = .....

## Unit 2

Practice

4

**Mansoura** has a population of **420195** person .  
If the population of Helwan **230000** person ,  
and the population of New Cairo is **200000** person,  
How many more The number of Helwan and New Cairo  
together than the number of **Menstrua**?

**Solution :** Population in Helwan and New Cairo = ..... + ..... = .....

The increase number = ..... - ..... = .....

Practice

5

The length of the River Nile is about **5853** km . **Karim**  
and his family travel across the Nile from one side to  
the other. If they travel **1075** kilometres in January,  
then **1120** kilometres in February, then **1325** kilometres  
in March . How many kilometres are left to travel to get  
to the other side?

**Solution :** Meters they have travelled = ..... + ..... + ..... = .....

Distance left = ..... - ..... = .....

Practice

6

**Mariam** counted **12500** Pharaonic ants in Colony A on  
Monday, **17500** ants on Tuesday, **40000** ants on Wednesday.  
How many ants counted by **Mariam** ?  
**Mariam** Knew that **Omar** checked the presence of  
**90300** ants in colony (A) . How many ants does **Mariam**  
still need to count in order to count all the ants in the colony?

**Solution :** What Mariam count = ..... + ..... + ..... = .....

What Mariam needs to count = ..... - ..... = .....

## Self - check on lesson ( 7 )

- 1** If you know that the budget for drug support in two consecutive years is **53703000** pounds **73355000** pounds. What is the total budget allocated for this support in the two years?

**Solution :** the total = ..... + ..... = .....

- 2** If the income of the Suez Canal increased to **2 655 999 000** pounds last year to **3 252 250 000** pounds this year. What is her total income in these two years?

**Solution :** the total = ..... + .....  
= .....

- 3** In the Gharbia Governorate budget, an item for road repair costs **300** million pounds. An item for electricity subsidy costs **410** million pounds, and an item for gasoline subsidies costs **270** million pounds. Find the total cost of these items.

**Solution :** the cost = ..... + ..... + .....  
= .....

- 4** If the budget allocated for the construction of **3** desalination plants (in pounds) is **1705000000**, **230100000**, **201300000**. What is the cost of the total budget allocated to build the stations?

**Solution :** the cost = ..... + ..... + .....  
= .....

- 5** **Hazem** watches two ant colonies containing **132890** ants. And **Menna** counted **75024** in colony (A) and **72999** ants in colony (B). Who has the most ants? How many more ants?

**Solution :** **Menna** has = ..... + ..... + .....  
..... has the greater  
The difference = .....

## Unit 2

- 6** The Great Pyramid was visited by **59 000** visitors on Monday, **27 525** visitors on Tuesday, and **32 975** visitors on Wednesday. The number of visitors is expected **150 000** visitors from Monday to Thursday. How many visitors must be present on Thursday to reach this number?

**Solution :** The total in 3 days = ..... + ..... + .....  
= .....

The expected number in Thursday = ..... - .....  
= .....

- 7** **Ahmed** ate a **340** calorie pancake for breakfast. Then **Ahmed** ate A bag of chips, an apple, and a chicken sandwich for lunch. Potato chips have **190** calories and an apple has **85** calories A chicken sandwich contains **255** calories. If the average adult can eat **2 000** calories a day, How many extra calories can Ahmed eat today?

**Solution :** The number of calories = ..... + ..... + ..... + .....  
= .....

The extra calories = ..... - .....  
= .....

- 8** The population of Tanta is **404 901** person . If the population of Banha **167029** person, and the population of Kafr El-Dawwar was **267370** person . How much more than the population of Banha and Kafr El-Dawwar altogether than the population of Tanta?

**Solution :** The population of Banha and Kafr El-Dawwar together = ..... + ..... + .....  
= .....

Increase number = ..... - ..... = .....

## Self - check 1 Unit 2

**1** Find the result of the following :

$$\begin{array}{r} \textcircled{a} \quad 340000 \\ + \quad 720000 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{b} \quad 8752013 \\ + \quad 439815 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{c} \quad 1570075 \\ + \quad 523040 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{d} \quad 9090909 \\ - \quad 4500407 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{e} \quad 175483 \\ - \quad 94851 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{f} \quad 43543543 \\ - \quad 3320265 \\ \hline \end{array}$$

**2** Mentally solve the following problems using a strategy of your choice :

$$\begin{aligned} \textcircled{a} \quad 340 + 204 &= (340 + 200) + \dots \\ &= \dots + \dots = \dots \end{aligned}$$

$$\begin{aligned} \textcircled{b} \quad 789 - 379 &= (789 - 79) - \dots \\ &= \dots - \dots = \dots \end{aligned}$$

**3** What is the difference between the numbers **47581** and **21359** ?  
Use rounding to the nearest 1000 and then find the actual result.

To the nearest 1000

$$\begin{array}{r} 47581 \rightarrow \dots \\ - 21359 \rightarrow \dots \\ \hline \dots \end{array}$$

Actual result

$$\begin{array}{r} 47581 \\ - 21359 \\ \hline \dots \end{array}$$

## Unit 2

### 4 Complete and write the property name :

- (a)  $(19 + 21) + 30 = \dots\dots\dots$  property :  $\dots\dots\dots$
- (b)  $18 + 37 + 12 = \dots\dots\dots$  property :  $\dots\dots\dots$
- (c)  $0 + 24\,311 = \dots\dots\dots$  property :  $\dots\dots\dots$
- (d)  $22 + 46 + 18 = \dots\dots\dots$  property :  $\dots\dots\dots$

### 5 Find the value of the variable :

Equation :  $X + 35\,000 = 35\,350$

Solution :  $\dots\dots\dots$

$\dots\dots\dots$	
$\dots\dots\dots$	$\dots\dots\dots$

6 The school wants to have it's own ant colony for observation and study. The colony will contain **173 500** ants. If **Eman** brings **27 385** ants, **Ayman** brings **52 890** ants. How many additional ants can the colony hold?

Solution : The sum =  $27\,385 + 52\,890 = \dots\dots\dots$

The additional ants =  $\dots\dots\dots - \dots\dots\dots$   
 $= \dots\dots\dots$



7 Port Said has a population of **538378** person. If the population of Zagazig **285 097** person, and Aswan's population is **241 261** person. How much less is the population of Zagazig and Aswan altogether than the population of Port Said?

Solution : The population of Zagazig and Aswan together  
 $= 285\,097 + 241\,261 = \dots\dots\dots$

The difference =  $538\,378 - \dots\dots\dots$   
 $= \dots\dots\dots$

## Self - check 2 on the previous units

**1** Find the result of the following :

(a)

$$\begin{array}{r} 241900123 \\ + 756010306 \\ \hline \end{array}$$

(b)

$$\begin{array}{r} 7676767 \\ + 1414141 \\ \hline \end{array}$$

(c)

$$\begin{array}{r} 1465789 \\ + 5984078 \\ \hline \end{array}$$

**2** Find the result of the following :

(a)

$$\begin{array}{r} 186565656 \\ - 127272727 \\ \hline \end{array}$$

(b)

$$\begin{array}{r} 6776776 \\ - 4140414 \\ \hline \end{array}$$

(c)

$$\begin{array}{r} 9400009 \\ - 5900081 \\ \hline \end{array}$$

**3** Choose the correct answer from the brackets :

(a)  $\frac{1}{4}$  milliard = ..... ( 250 000 , 250 000 000 )

(b) 83 thousands = ..... tens ( 83 000 , 8300 )

(c) 12900 ..... 12 thousand , nine hundreds ( > , = , < )

(d) 7 ten thousands = ..... ( 7 000 , 70 000 )

(e) 64000 = ..... hundreds ( 640 , 640 000 )

(f) The number that 100 times 91 = ..... ( 91 000 , 9100 )

## Unit 2

- 4** Write the equation and find the value of the variable in each case :

X	
243	351

Equation : .....

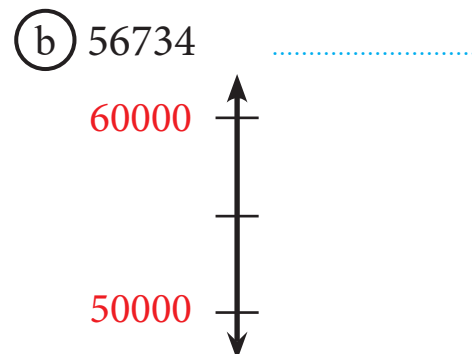
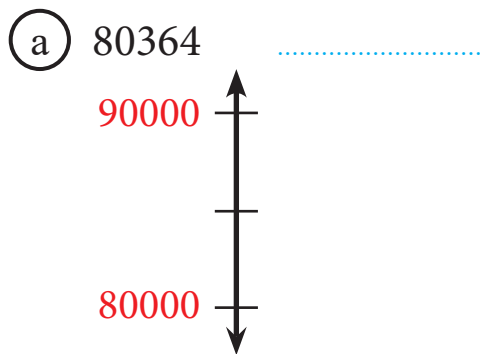
Solution : .....

3650	
X	1650

Equation : .....

Solution : .....

- 5** Round to the nearest ten thousand (mid-point strategy) :



- 6** Using the compose and decompose strategy to find the following result (**indicate the steps for the solution**) :

$$489 + 134 = ( \dots + \dots ) + ( \dots + \dots ) + ( \dots + \dots )$$

$$= \dots$$

- 7** **Malak** watches two ant colonies containing a million ants. **Kenzy** says that she has half a million ants in colony **A** and a quarter of a million ants in colony **B**.  
Who has the greatest number of ants? what is the difference ?

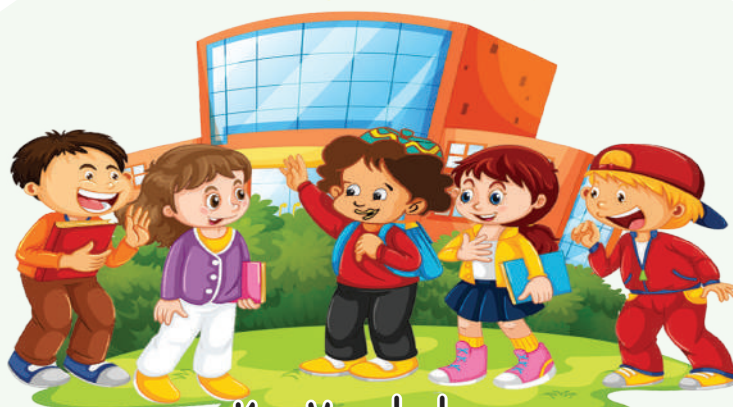
**Solution** : Number with **Kenzy** = ..... + ..... = .....

The difference = ..... - ..... = .....

For more exercises follow Self- check on Syllabus in the second part



# Concepts of Measurement



## Unit Three

### Key Vocabulary

Average	متوسط	Graduated	مدرج
Adult	بالغ	Hatch	يفقس
Bar model	نموذج شريطي	Increase	يزيد
Bouquet	حزمة ورد	Larva	شرنقة
Contained	يحتوي على	Measurement	القياس
Convert	حول	Mass	كتلة
Capacity	سعة	Nap	غفوة
Class time	حصة	Pupa	يرقة
Distance	مسافة	Replenish	لتجديد
Depth	عمق	Scientists	العلماء
Energy	الطاقة	Scale	مقياس
Fish tank	حوض سمك	Travelled	سافر

Kilometres	Hectometre	Decametre	<b>Metre</b>	Decimetre	Centimetre	Millimetre
Kilogram	Hectogram	Decagram	<b>Gram</b>	Decigram	Centigram	Milligram
Kilolitre	Hectolitre	Decalitre	<b>Litre</b>	Decilitre	Centilitre	Millilitre
1000 units	100 units	10 units	<b>1 units</b>	1/ 10 units	1/ 100 units	1/ 1000 units

### Content

Exercise  
inspired from  
Math Journal

Exercise  
on lessons

Self-Check  
on the unit

## Ant Travel ( Measurement of length )

### Lesson

### 1

#### Activity 1 Know some units of measurement of length :



**Kilometre (km)** It is used to measure very long distances (lengths).

**Example :** The distance between Tanta and Cairo = 100 km.



**Metre (m)** It is used to measure long distances (lengths).

**Example :** a street width about 20 m or a building height about 30 m



**Decimetre (dm)** It is used to measure average distances (lengths).

**Example :** Window width 5 dm or stove height 8 dm.



**Centimetre (cm)** Used to measure small distances (lengths).

**Example :** Pencil length 16 cm.



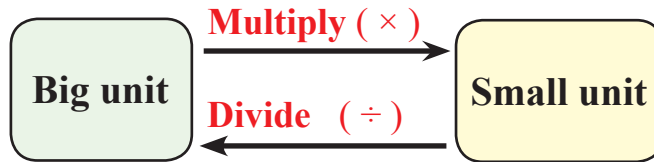
**Millimetre (mm)** Used to measure very small distances (lengths).

**Example :** Nail thickness 3 mm.

#### Practice 1 Circle the best unit for each length :

- a) The distance between home and school.  
(Kilometres, meters, centimetres, millimetres)
- b) The length of the River Nile.  
(Kilometres, meters, centimetres, millimetres)
- c) Ant length. (Kilometres, meters, centimetres, millimetres)
- d) The distance from Cairo to Alexandria.  
(Kilometres, meters, centimetres, millimetres)

**Activity 2 Note :**



**Practice 2** Complete the following :

**a**

Kilometre	Metre
1	1000
3	.....
.....	40000
7	.....
50	.....

**b**

m	cm
1	.....
.....	300
10	.....
6	.....
50	.....

**c**

cm	mm
50	.....
.....	60
7	.....
.....	700
50	.....

Remember



- 1 km = 1000 m
- 1 m = 100 cm
- 1 cm = 10 mm

**Metre conversion**  
**Multiply by 1000**

**From m to km**  
**÷ 1000**

**From m to cm**  
**× 100**

**From cm to m**  
**÷ 100**

**From cm to mm**  
**× 10**

**From mm to cm**  
**÷ 10**

# Unit 3

**Practice 3** Convert the lengths to the units shown in the bar models as in (a) :

(a) 140 cm



(b) 410 cm



(c) 230 cm



(d) 478 cm



(e) ..... cm



(f) ..... cm



**Practice 4** If an ant is one centimetre long and there is a row of 100 000 ants. How long is this row in metres, and how long is it in kilometres?

**Solution :** ant length = 1 cm , the length of the row = 100000 cm

From cm to m ( ÷ 100 )

the length of the row in m ( after divide ) = ..... m

From m to km ( ÷ 1000 )

the length of the row in km ( after divide ) = ..... km

**Practice 5** Complete the following as in (a) :

(a) 3 m , 40 cm = 300 cm + 40 cm = 340 cm

(b) 1 m , 50 dm = ..... + ..... = ..... cm

(c) 75 mm , 7 dm = ..... + ..... = ..... mm

(d) 1 km and quarter = ..... + ..... = ..... m

(e) 1 km and half = ..... + ..... = ..... m

(f) 1 m and half = ..... + ..... = ..... cm

quarter of Km = 250 m  
Half of Km = 500 m

**Practice 6** An ant can carry a load of 1 kilometre, It repeated this 10 times. What is the total distance travelled by the ant? In a kilometre, in a meter, and in a centimetre?

**Solution :** Distance in one trip = ..... km

Distance in km = .....  $\times$  10 = ..... km

**Note :** 1 m = 100 cm , 1 km = 1000 m

**Then :** from km to m (  $\times$  1000 )

Distance in m (after multiply) = ..... m

from m to cm (  $\times$  100 )

Distance in cm = ..... cm



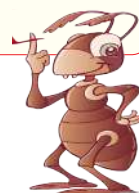
**Practice 7** An ant can walk 250 metres without stopping in one hour. How many hours can the ant walk to travel one kilometre? How far would it go if it walked for 10 hours?

**Solution :** 1 km = 1000 m , Distance in 1 hr = 250 m

1 km = 250 m + ..... m + ..... m + ..... m = 1000 m  
                   1hr           1hr           1hr           1hr

Total time = ..... hr

Distance in 10 hr =  $250 \times$  ..... = ..... m



## Self - check on lesson ( 1 )

**1** Convert the lengths to the units shown in the bar Models as in (a) :

(a) 380 cm

<b>3 m</b>	<b>80 cm</b>
------------	--------------

(b) 207 cm

..... m	..... cm
---------	----------

(c) 413 cm

..... m	..... cm
---------	----------

(d) ..... cm

1 m	33 cm
-----	-------

(e) 1500 m

..... km	..... m
----------	---------

(f) ..... m

2 km	400 cm
------	--------

**2** Put (✓) in front of the correct statement and an (x) in front of the incorrect statement :

(a) 3 km = 300 m

( )

(b) 2 km , 250 m = 2250 m

( )

(c) 300 cm = 3 m

( )

(d) 1m + 30 cm = 33 cm

( )

(e) 4 m + 90 cm = 5 m

( )

(f) 3km +500 m = 3500 m

( )

(g) 7 m = 700 km

( )

(h) 7500 cm =7 km +500 m

( )

**3** Complete the following :

(a) 4 m , 18 cm = ..... + ..... = ..... cm

(b) 18 m , 14 cm = ..... + ..... = ..... cm

(c) 8 km , 14 m = ..... + ..... = ..... m

(d) 2 km , 55 m = ..... + ..... = ..... cm

**4** Put the suitable mark ( $>$ ,  $=$ ,  $<$ ) :

- (a) 3 m ..... 275 cm  
 (b) 20 dm ..... 2m  
 (c) 47 cm .....  $\frac{1}{2}$  m  
 (d) 1 m ..... 9 dm  
 (e) 250 mm ..... quarter m  
 (f) 500 mm ..... 50 dm  
 (g) 1 m ..... 100 mm

**Remember that**

1 metre = 100 cm  
 Quarter metre = 25 cm  
 Half metre = 50 cm  
 1 and Quarter m = 125 cm  
 3 Quarter m = 75 cm

1 kilometre = 1000 m  
 Quarter km = 250 m  
 Half km = 500 m  
 3 Half km = 750 m

**5** Arrange the following lengths :

- (a) 1 m , 1 dm , 1 km , 1 mm , 1 cm

In ascending order : 1 ..... , ..... , ..... , ..... , ..... .

- (b) 250 m , 1 km , 100 m , 4000 cm , 25000 dm

In ascending order : ..... , ..... , ..... , ..... , ..... .

- (c) 200 mm , 200 m , 200 cm , 200 km , 200 dm

In descending order: ..... , ..... , ..... , ..... , ..... .

**6** A house for ants The scientists found that the depth of the house is 8 meters, find its depth in centimetres :

**Solution :** the depth = ..... m , m = 100 cm,

From m to cm ( $\times 100$ )

The depth in cm (after multiply) = ..... cm

# The Weight Can Wait

## Lesson

## 2

### Activity 1 Know some units of mass :



**Kilogram (kg)** It is used to measure heavy masses.

**Example :** The mass of a child = 35 kg



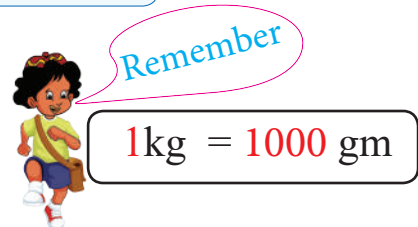
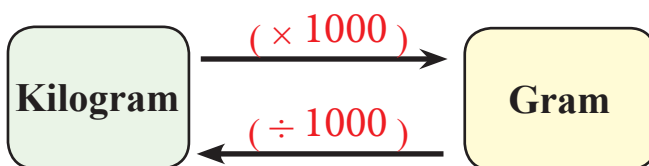
**Gram (gm)** It is used to measure light masses.

**Example :** The mass of a silver ring = 5 gm

### Practice 1 Ring the best unit of measurement for each mass :

- (a) Watermelon mass ( **km** , **gm** )      (b) An ant mass ( **kg** , **gm** )  
 (c) Sharpener mass ( **gm** , **gm** )      (d) Bicycle mass ( **km** , **gm** )

### Activity 2 Know the unit conversions of mass :



### Practice 2 Complete the conversion table :

Kilogram	Gram
3	3000
8	.....
.....	50000
4	
	30000

Convert to grams  
 We add 3 zeros  
 or multiply by 1000

Conversion to kilograms  
 remove 3 zeros



**Practice 3** Convert to the units shown in the bar models as in (a) :

(a) 4590 gm

4 kg	590 gm
------	--------

(b) 2007 gm

..... kg	..... gm
----------	----------

(c) 2313 gm

..... kg	..... gm
----------	----------

(d) ..... gm

1 kg	33 gm
------	-------

(e) 8400 gm

..... kg	..... gm
----------	----------

(f) ..... gm

2 kg	400 gm
------	--------

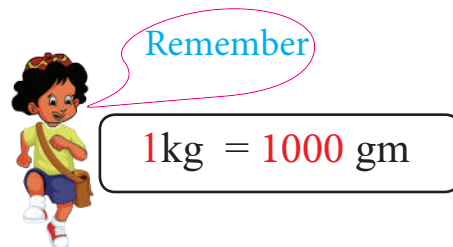
**Practice 4** Complete the conversion :

(a) 2456 gm = 2 kg , ..... gm

(b) 5235 gm = ..... kg , 235 gm

(c) 7324 gm = ..... kg , ..... gm

(d) 4535 gm = ..... kg , ..... gm



**Practice 5** Arrange the following mass :

(a) 9650 kg , 80 kg , 200000 gm , 6 kg .

In ascending order : ..... , ..... , ..... , .....

(b) 3150 gm , 300 gm , 7 kg , 40000 gm .

In descending order : ..... , ..... , ..... , .....

## Unit 3

**Practice 6** Put ( > , < , = ) :

(a) 2 kg

1500 gm

(b) 5 kg

5000 gm

(c) 3 kg

250 gm

(d) 6000 gm

7 kg

(e) 7 kg

7070 gm

(f) 3 kg

3490 gm

(g) 4000 gm

5 kg

(h) 5500 gm

5 kg

**Practice 7** Answer the following :

(a) One ant colony mass 3493 grams.

Rewrite this number using kilograms..

**Solution :** 3493 gm = ..... kg , ..... gm .

(b) The mass of a colony of ants is 14 kilograms, 89 grams.

Rewrite this mass in grams.

**Solution :** 14 kg, 89 gm = ..... gm

(c) If Sohaila's mass is 20 kg, 300 gm and her brother Fouad's mass is 35 kg, 600 gm . Find the difference between the two masses.

**Solution :** The difference = ..... kg , ..... gm

**Remember**

1kg = 1000 gm

**Remember that :**

add or subtract  
Similar units together

## Self - check on lesson (2)

### 1 Circle the suitable unit :

- (a) Lion mass can be ..... ( 900 gm , 300 kg , 2 kg )
- (b) Pencil mass can be ..... ( 1 kg , 800 kg , 20 gm )
- (c) An apple mass can be..... (2 kg , 10000 gm , 200 gm )
- (d) The mass of the car can be ..... (150 L , 150 gm , 1500 kg )
- (e) A mass of chocolate can be..... ( 2 kg , 1 kg , 100 gm )

### 2 Convert the following masses to the units shown in the bar model :

(a) 1350 gm

..... kg	..... gm
----------	----------

(b) 5070 gm

..... kg	..... gm
----------	----------

(c) 3300 gm

..... kg	..... gm
----------	----------

(d) ..... gm

8 kg	8 gm
------	------

(e) 4007 gm

..... kg	..... gm
----------	----------

(f) ..... gm

5 kg	155 gm
------	--------

3 If Saeed's mass is 15 kg, 300 gm ,  
and his brother Saif's mass is 12 kg, 100 g .  
Find the sum of their masses.

**Solution :** The sum = ..... kg , ..... gm

Remember that  
add or subtract  
Similar units together

## Unit 3

### 4 Complete the following :

(a)  $2 \text{ kg} + 350 \text{ gm} = \dots\dots\dots \text{ gm} + \dots\dots\dots \text{ gm} = \dots\dots\dots \text{ gm}$

(b)  $2 \text{ kilogram and half} = 2 \text{ kg} + \dots\dots\dots \text{ kg}$   
 $= 2000 \text{ gm} + \dots\dots\dots \text{ gm} = \dots\dots\dots \text{ gm}$

(c)  $3 \text{ kg} - 500 \text{ gm} = \dots\dots\dots \text{ gm} - \dots\dots\dots \text{ gm} = \dots\dots\dots \text{ gm}$

(d)  $12 \text{ kg} - 3 \text{ kilogram and half} = \dots\dots\dots \text{ gm} - \dots\dots\dots \text{ gm} = \dots\dots\dots \text{ gm}$

(e)  $7 \text{ kg} + 2 \text{ kilogram and half} = \dots\dots\dots \text{ gm} + \dots\dots\dots \text{ gm} = \dots\dots\dots \text{ gm}$

(f)  $6 \text{ kilogram and quarter} = \dots\dots\dots \text{ gm} + \dots\dots\dots \text{ gm} = \dots\dots\dots \text{ gm}$

### 5 Arrange the following mass :

- (a) 1 kilograms and half , 3 kilograms , 2 kilograms , 1400 grams , 200 grams .

**Solution :** 1 kilograms, and half =  $\dots\dots\dots$  gm , 2 kilogram =  $\dots\dots\dots$  gm  
 $3 \text{ km} = \dots\dots\dots \text{ gm}$

**In descending order :**  $\dots\dots\dots$

$\dots\dots\dots$

- (b) 3 kilograms , 4 kilograms , 500 grams , 1 kilograms and half , 2900 grams.

**Solution :** 3 kilogram =  $\dots\dots\dots$  gm , 1 kilogram and half =  $\dots\dots\dots$  gm  
 $4 \text{ km} = \dots\dots\dots \text{ gm}$

**In ascending order :**  $\dots\dots\dots$

$\dots\dots\dots$

# Fill It Up - Measurement and Unit Conversion

Lesson

3, 4

## Activity 1 Know some units of capacity :



**Litres (L)**

It is used to measure large capacity.

**Example :** Car oil jerrycan = 3 litres



**Millilitres (mL)**

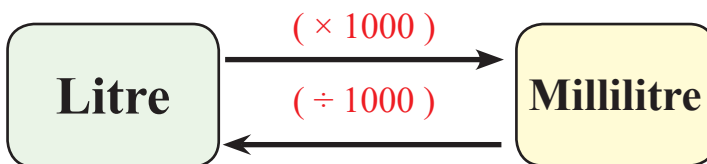
It is used to measure small capacity.

**Example :** 1 cup of milk = 200 ml

## Practice 1 Answer the following :

- (a) Small water bottle capacity ( Litre , ml )
- (b) Water tank capacity ( Litre , ml )
- (c) Dish washing liquid bottle capacity ( Litre , ml )
- (d) Medicine bottle Capacity ( Litre , ml )

## Activity 2 Know some units of capacity :



**Remember**

1 litre = 1000 ml

## Practice 2 Complete the following table :

Litre	Millilitre
6	.....
9	.....
.....	6000
3	
	10000

To convert to ml  
We add 3 zeros  
or multiply by 1000

To conversion to  
litre remove 3 zeros

# Unit 3

**Practice 3** In the following components of Sobia , complete the table as the **example** :

	Mass units	Capacity by Litre
(a) 100 gm of rice	✓	
(b) 500 ml of water.		✓
(c) 750 ml of milk		
(d) 100 gm of sugar		
(e) 5 ml of vanilla		
(f) 55 ml of coconut milk		

**Practice 4** Convert to the units shown in the bar model as in (a) :

(b) 8050 ml

8 L	50 ml
-----	-------

(a) 5009 ml

..... L	..... ml
---------	----------

(a) 9425 ml

..... L	..... ml
---------	----------

(d) ..... gm

5 L	403 ml
-----	--------

(a) 6360 ml

..... L	..... ml
---------	----------

(d) ..... gm

8 L	910 ml
-----	--------

**Practice 5** The car is filled with 45 litres. How many millilitres are used to fill the car?

**Solution :** Converting from litres to millilitres (  $\times 1000$  )

The number of millilitres used = .....  $\times 1000$  = ..... ml

## Conversion table

Kilometres	Hectometre	Decametre	<b>Metre</b>	Decimetre	Centimetre	Millimetre
Kilogram	Hectogram	Decagram	<b>Gram</b>	Decigram	Centigram	Milligram
Kilolitre	Hectolitre	Decalitre	<b>Litre</b>	Decilitre	Centilitre	Millilitre
1000 units	100 units	10 units	<b>1 units</b>	1/ 10 units	1/ 100 units	1/ 1000 units

**Multiply**

**Divide**

how can I use the table :

When we move from one unit to the next (**divide or multiply by 10** )  
 And when we move to the square after the adjacent (**divide or multiply by 100**)  
 And when we move to the square after the adjacent dimension  
 (**divide or multiply by 1000**)

**Activity 3** From the conversion table, note the following :

Kilometre = 1000 m

Hectometre = 100 m

Decametre = 10 m

Kilogram = 1000 gm

Hectogram = 100 gm

Decagram = 10 gm

Kilolitre = 1000 litre

Hectolitre = 100 litre

Decalitre = 10 litre

1 m = 10 dm

1 m = 100 cm

1 m = 1000 mm

Gram = 10 decigram

Gram = 100 centigram

Gram = 1000 milligram

Litre = 10 decilitre

Litre = 100 centilitre

Litre = 1000 millilitre

## Unit 3

**Practice 6** From the conversion table if something is 200 centimetres long, What is its length in decimetres? What is its length in metres?

**Solution :**  $200 \text{ cm} = 200 \div \dots\dots\dots = \dots\dots\dots \text{ dm}$

$200 \text{ cm} = 200 \div \dots\dots\dots = \dots\dots\dots \text{ m}$

**Practice 7** Answer the following :

- (a) An ant walked 8 metres from its ant house to search for food.  
What is the distance travelled in centimetres?

**Equation :** the distance =  $8 \text{ m} \times \dots\dots\dots$   
=  $\dots\dots\dots \text{ cm}$

**Remember** that  
convert  
From a small  
unit to a large  
, we divide

- (b) It is known that a colony of army ants consumes 6 decigrams of food in one day. How many grams of food does the colony consume?

**Equation :** the used food =  $6 \text{ decigrams} \times \dots\dots\dots = \dots\dots\dots \text{ gm}$

**Remember** that  
convert  
From a large  
unit to a small  
, we Multiply

**Practice 8** The family drank one litre and 500 millilitres of orange juice at breakfast. If there is 3 litres of orange juice before breakfast. How much orange juice is left?

**Solution :** Number of litres = 1 litres, 500 ml =  $\dots\dots\dots \text{ ml}$

From litre to millilitre (  $\times 1000$  )

The juice in ml =  $3 \times \dots\dots\dots = \dots\dots\dots \text{ ml}$

The left =  $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots \text{ ml}$



## Self-check on lesson (3, 4)

**1** Write the suitable unit of measurement ( **litre - ml - kg - gm** ) :

- (a) Buying fruit from the fruit seller . (.....)
- (b) Cup of water . (.....)
- (c) Buying gold from a gold store. (.....)
- (d) Baby mass . (.....)
- (e) Car fuel tank. (.....)

**2** Convert to the units shown in the bar model :

- (a) 4020 **ml**  

..... Litres	..... ml
--------------	----------
- (b) 1500 **ml**  

..... Litres	..... ml
--------------	----------
- (c) 7007 **ml**  

..... Litres	..... ml
--------------	----------
- (d) ..... **ml**  

<b>3 Litres</b>	<b>170 ml</b>
-----------------	---------------

**Remember** that  
add or subtract  
Similar units together

**3** Complete the following :

- (a) 21 litres + 2 litres = ..... litres = ..... ml
- (b) 3000 ml + 1200 ml = ..... ml = ..... litres
- (c) 4 litres and 485 ml - 323 ml = ..... ml
- (d) 5200 gm + 1800 gm = ..... gm = ..... kg
- (e) 2 kg and 540 gm - 150 gm = ..... g,m

## Unit 3

### 4 Convert to the suitable units :

(a)  $10 \text{ litres} + 1495 \text{ ml} = \dots\dots\dots \text{ litres}, \dots\dots\dots \text{ ml}$

(b)  $8 \text{ kg} - 2000 \text{ gm} = \dots\dots\dots \text{ kg}$

(c)  $4 \text{ litres} - 800 \text{ ml} = \dots\dots\dots \text{ ml}$

(d)  $3 \text{ km} + 300 \text{ m} = \dots\dots\dots \text{ m}$

(e)  $19 \text{ litres} + 324 \text{ ml} = \dots\dots\dots \text{ ml}$

(f)  $5 \text{ km} - 900 \text{ m} = \dots\dots\dots \text{ m}$

(g)  $3 \text{ kg and } 344 \text{ gm} + 2 \text{ kg and } 50 \text{ gm} = \dots\dots\dots \text{ gm}$

**Remember that**  
add or subtract  
Similar units together

**Remember that**  
convert  
From a small  
unit to a large  
, we divide

### 5 From the conversion table, complete the following :

(a)  $60000 \text{ ml} = \dots\dots\dots \text{ litres} = \dots\dots\dots \text{ decilitre}$

(b)  $40 \text{ gm} = 40 \div \dots\dots\dots = \dots\dots\dots \text{ decagram}$

(c)  $70 \text{ km} = \dots\dots\dots \text{ m} = \dots\dots\dots \text{ hectometre}$

(d)  $90 \text{ m} = \dots\dots\dots \text{ cm} = \dots\dots\dots \text{ mm}$

(e)  $5000 \text{ milligram} = 5000 \div \dots\dots\dots = \dots\dots\dots \text{ gm}$

(f)  $20 \text{ decalitre} = \dots\dots\dots \text{ litres} = \dots\dots\dots \text{ ml}$

(g)  $8 \text{ hectometer} = \dots\dots\dots \text{ meter} = \dots\dots\dots \text{ mm}$

(h)  $20 \text{ gm} = \dots\dots\dots \text{ centigram} = \dots\dots\dots \text{ milligrams}$

**Remember that**  
convert  
From a large unit  
to a small one,  
we Multiply

- 6** **Nadine** walked **60** meters from her own home to school. What is the distance travelled by **Nadine** in centimetres?

**Solution :** the distance =  $60 \text{ (m)} \times \dots\dots\dots = \dots\dots\dots \text{ cm}$

- 7** **Duha's** fish tank contains **5** litres and **500** millilitres of water. If a fish tank can hold **10** litres of water, How much extra water do you need sacrificed to fill the fish tank?

**Solution :** Number of litres =  $10 \times \dots\dots\dots 1000 \dots\dots\dots = \dots\dots\dots \text{ ml}$

Amount in millilitre =  $5 \text{ litre and } 500 \text{ ml} = \dots\dots\dots \text{ ml}$

The needed water =  $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots \text{ ml}$

- 8** The fuel tank in a car filled with **20** litres and **500** millilitres of gasoline. At the end of the day, there are **15** litres, **250** millilitres of gasoline left in the tank . How much gasoline was used?

**Solution :** Amount of fuel in the tank =  $20 \text{ litres and } 500 \text{ ml} = \dots\dots\dots \text{ ml}$

The remainder =  $15 \text{ litres and } 250 \text{ ml} = \dots\dots\dots \text{ ml}$

The amount used =  $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots \text{ ml}$

- 9** Two hundred thousands ants drink one litre of water. How many millilitres of water do all the ants drink?

**Solution :** the amount used =  $1 \text{ ( litre )} \times \dots\dots\dots$   
 $= \dots\dots\dots \text{ ml}$



# What time is it ? - How Long does it take ?

Lesson

5, 6

## Activity 1 Note and complete :

Week	Day
1	7
2	14
3	21
4	
5	
6	
7	

Day	Hour
1	24
2	48
3	72
4	
5	
6	
7	

Hour	Minute
1	60
2	120
3	180
4	
5	
6	
7	

Minute	Second
1	60
2	120
3	180
4	
5	
6	
7	

## Practice 1 Using the above tables, complete the conversion :

- (a) 10 hours , 30 minutes =  $( 10 \times 60 ) + 30 = \dots\dots\dots$  minutes
- (b) 6 minutes , 15 seconds =  $( 6 \times \dots\dots ) + \dots\dots = \dots\dots\dots$  seconds
- (c) 4 days , 20 hours =  $( 4 \times \dots\dots ) + \dots\dots = \dots\dots\dots$  hours
- (d) 7 weeks , 5 days =  $( 7 \times \dots\dots ) + \dots\dots = \dots\dots\dots$  days

## Practice 2 Write the time shown on each clock :



..... : .....

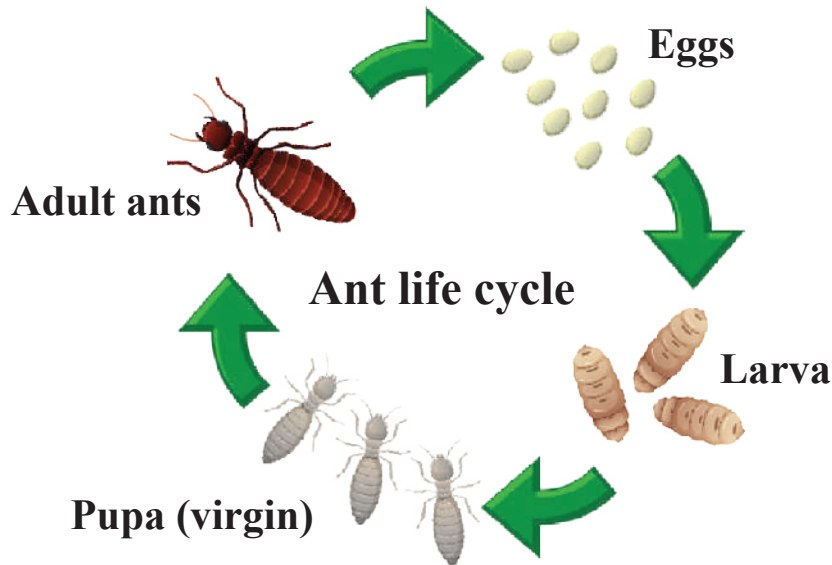


..... : .....



..... : .....

**Activity 2** Note the life cycle of ants :



**Practice 3** Answer the following :

- (a) If an ant's eggs take 10 days to hatch,  
How many hours does it take?

**Solution :** 10 days =  $10 \times \dots = \dots$  hours

- (b) If the larval stage lasts 6 days and 13 hours,  
How many hours does it take?

**Solution :** 6 days , 13 hours =  $( 6 \times \dots ) + \dots = \dots$  hours

- (c) If the pupa stage takes 21 days to become an adult ant,  
How many weeks does it take?

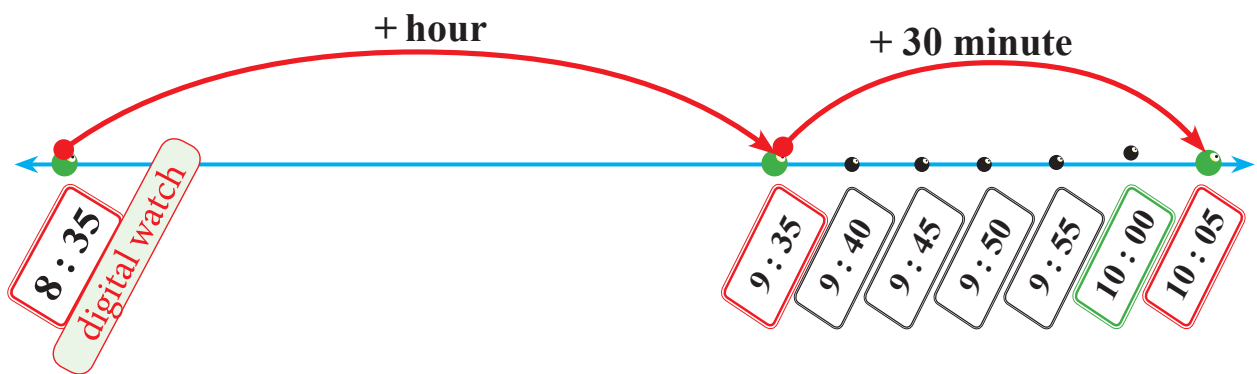
**Solution :** Number of weeks =  $21 \div \dots = \dots$  weeks

## Unit 3

### Activity 3 Calculating time spent :

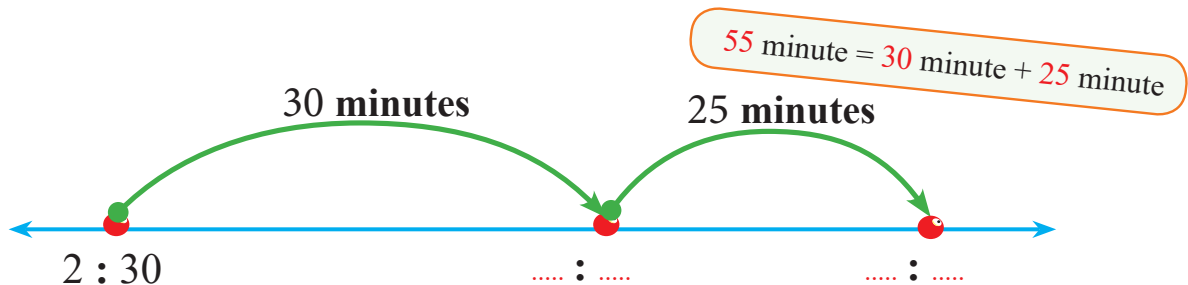
**Farah** is training for a marathon and her goal is to run for **1** hour and **30** minutes. If she starts running at **8 : 35** in the morning ,  
When will she finish running?

**Solution :** Draw a number line for the hours and then move from one hour **8 : 35** ( get **9 : 35** )  
then move 30 minute ( get **10 : 05** )



**Practice 4** **Gamal** walked in the park for **2** hours and **30** minutes and he has another **55** minutes to walk,  
How long does he take?

**Solution :** Draw a number line for the hours and then move from **2 : 30** time as (**30** minute )  
( get ..... : ..... ) then move for ( **25** minute ) ( get ..... : ..... )  
all the time = ..... hours , ..... minute



**2 hr and half**

**Activity 4** Note the conversions :

Remember that  
add or subtract  
Similar units together

$$\begin{aligned} \text{(a)} \quad 3 : 25 + 45 \text{ minutes} &= 3 : 25 + 00 : 45 \\ &= 3 : 70 = 4 : 10 \end{aligned}$$

$$\begin{aligned} 70 \text{ min} &= 60 \text{ min} , 10 \text{ min} \\ &= 1 \text{ hr} , 10 \text{ min} \end{aligned}$$

$$\text{(b)} \quad 1 : 29 + 1 : 55 = 2 : 84 = 3 : 24$$

$$84 \text{ min} = 1 \text{ hr} , 24 \text{ min}$$

**Practice 5** Complete the following :

$$\text{(a)} \quad 2 : 39 + 1 : 36 = 3 : 75 = \dots : \dots$$

$$75 \text{ min} = \dots \text{ hr} , \dots \text{ min}$$

$$\text{(b)} \quad 00 : 43 + 00 : 51 = \dots : \dots = \dots : \dots$$

$$\dots \text{ min} = \dots \text{ hr} , \dots \text{ min}$$

$$\text{(c)} \quad 1 : 41 + 52 \text{ min} = 1 : 41 + \dots : \dots$$

$$\dots \text{ min} = \dots \text{ hr} , \dots \text{ min}$$

$$= \dots : \dots = \dots : \dots$$

**Practice 6** Answer the following :

- (a) An ant's first nap begins at 7 : 45 am and takes for 60 seconds.  
When do you wake up ?

**Solution :** 60 second =  $\dots$  min , wake up at = 7:45 +  $\dots : \dots$  =  $\dots : \dots$

- (b) An ant runs in a colony for 3 hours and 13 minutes before taking a nap. if it works at 7 : 45 am When does an ant nap end?

**Solution :** nap time = 7 : 45 + 3 hr , 13 min = 7 : 45 +  $\dots : \dots$   
=  $\dots : \dots$

## Self - check on lesson ( 5 , 6 )

### 1 Choose the suitable unit from the brackets :

- (a) Class time at school ( 45 hr , 45 min , 45 second )
- (b) Homework work takes ( 4 seconds , 4 days , 4 hr )
- (c) Dinner time ( 1 day , 10 min , 4 hr )
- (d) Walking time to school ( 3 min , half an hour , 1 day )
- (e) The average person sleeps ( 480 second , 480 min , 48 hr )
- (f) 4 minutes , 10 second = ..... ( 250 second , 250 min , 250 hr )

### 2 Complete the following :

- (a) 10 hours , 7 minutes = ( 10 × ..... ) + ..... = ..... minutes
- (b) 5 minutes, 12 seconds = ( 5 × ..... ) + ..... = ..... seconds
- (c) 2 days , 12 hours = ( 2 × ..... ) + ..... = ..... hours
- (d) 4 weeks , 2 days = ( 4 × ..... ) + ..... = ..... days
- (e) 7 hours, 10 minutes = ( 7 × ..... ) + ..... = ..... minutes
- (f) 3 days , 10 hours = ( 3 × ..... ) + ..... = ..... hours
- (g) 2 weeks , 2 days = ( 2 × ..... ) + ..... = ..... days



- 3** Ant workers take **240** naps a day. Each nap lasts one minute .  
How many hours do ants take in naps?

**Solution :** nap time = 1 min

So all naps time = ..... min

Number of hours =  $240 \div \dots = \dots$  hr

**Remember that**

$$4 \times 60 = 240$$

$$1 \text{ hr} = 60 \text{ min}$$

- 4** Ant workers work on average about **19** hours a day.  
How many hours worked by the ant in three days?

**Solution :** Work time in a days = ..... hr

Work time in 3 a days =  $19 + \dots + \dots = \dots$  hr

=  $19 \times \dots = \dots$  hr

- 5** Answer the following :

- a** Amir's family used their computer for **3** hours on Saturday,  
**4** hours on Sunday and **5** hours on Monday.

How many minutes have they used the computer?

**Solution :** the time =  $3 + \dots + \dots = \dots$  hr

Time in minutes =  $\dots \times \dots = \dots$  min

- b** Dalia takes **2** hours and **15** minutes to drive  
to her grandmothers house.

How many minutes does she takes in drive?

**Solution :** 2 hours, 15 min =  $( \dots \times \dots ) + \dots$   
= ..... min

**Remember that**  
First we multiply  
what's inside  
the parentheses

## Unit 3

### 6 Complete the following :

(a)  $25 \text{ min} + 3 : 45 = \dots : \dots + \dots : \dots$

$70 \text{ min} = 1 \text{ hr} , 10 \text{ min}$

$= \dots : \dots = \dots : \dots$

(b)  $6 : 17 + 2 : 45 = \dots : \dots = \dots : \dots$

$62 \text{ min} = 1 \text{ hr} , 2 \text{ min}$

(c)  $4 : 20 - 3 : 07 = \dots : \dots$

(d)  $3 : 35 + 4 : 50 = \dots : \dots = \dots : \dots$

(e)  $8 : 46 - 5 : 25 = \dots : \dots$

Remember that  
Add or subtract similar units together

7 The ant workers went out to find food for the colony, the workers left **6 : 30** in the morning and come back at **7 : 42** in the morning. How long did the ant workers take to search for food?

**Solution :** The time =  $\dots : \dots - \dots : \dots = \dots : \dots$   
 $= \dots \text{ hr} , \dots \text{ min}$

8 Gana and Maha have **5** hours to watch three movies, the first movie is **1** hour **22** and minutes long, the second movie is **2** hours and **12** minutes and the third movie is **1** hour and **57** minutes. Do the two girls have enough time to watch the three movies?

**Solution :** the time =  $1 \text{ hr}, 22 \text{ min} + 2 \text{ hr}, 12 \text{ min} + 1 \text{ hr}, 57 \text{ min}$   
 $= \dots : \dots = \dots : \dots$   
 $= \dots \text{ hr} , \dots \text{ min}$

$91 \text{ min} = 1 \text{ hr} , 31 \text{ min}$

The two girls ( **has** - **has not** ) enough time.

# Graduated measurements (graphic representation)

Lesson

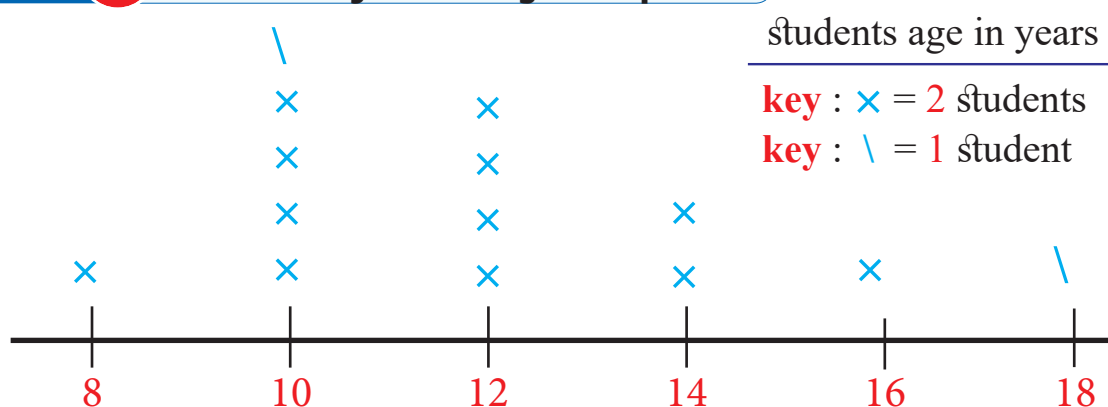
7

## Line plot chart

**Line plot** is A graph showing data using a number line.

The  $\times$  symbol is used above each data value to display the frequency of the event .

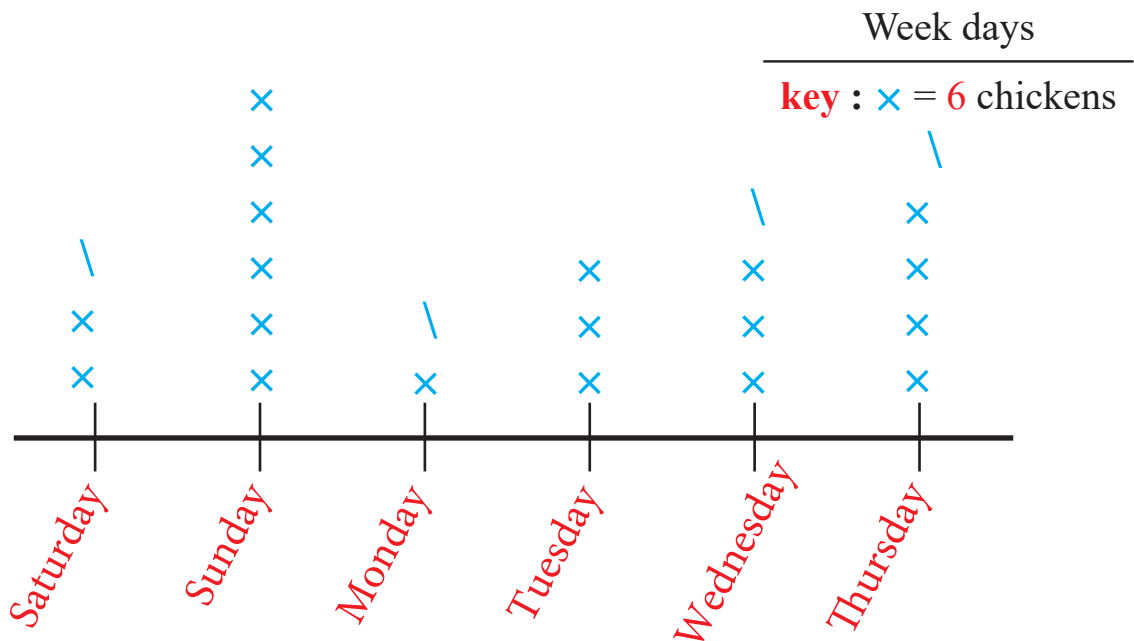
**Activity** \* **Note the following line plot :**



- What does the symbol  $\times$  represent? The symbol represents 2 students
- What does the  $\backslash$  symbol represent? The symbol represents 1 student
- What is the scale of a number line? 8 , 10 , 12 , ..... **skip 2**
- How many students who participated?  
 $12(\times) , 2(\backslash) = 24 + 2 = 26$  students
- How many students are 12 years old? .....
- How many students are under 14 years old? .....
- How many students over 12 years old? .....
- How many students are over 8 years old and under 16 years old?  
..... students

# Unit 3

## Practice 1 Using the line plot to answer the following :



- (a) What is the key to drawing? **Code X** number of **6** chickens  
The symbol  $\backslash$  represents the number of **3** chickens sold
- (b) How many chickens were sold on Saturday? ..... chicken
- (c) What day was the most number of chickens sold? .....
- (d) How many chickens were sold on Wednesday and Thursday?  
..... chicken
- (e) How many chickens were sold? ..... chicken
- (f) What is the difference between the number of chickens sold  
on Sunday and Monday? ..... chicken
- (g) What day was the least number of chickens sold? .....
- (h) What days were an odd number of chickens sold ? .....
- (i) What are the days in which an even number of chickens  
were sold? .....

**Practice 2** Answer the following :

Ant kind	Length ( mm )	Ant kind	Length( mm )
Ghost ants	1	Red harvester ants	6
Thief ant	2	Warrior ant	7
Pharaonic ants	2	Wood ants	9
Argentine ants	3	Screwdriver ant trap	9
Fire ants	4	Panda ant	8
Sugar ants	5	Dinosaur ants	10
Crazy ants	3	Leaf-cutter ants	10
African ants	10	Flying ants	10
Pavement ants	3	Black garden ants	4

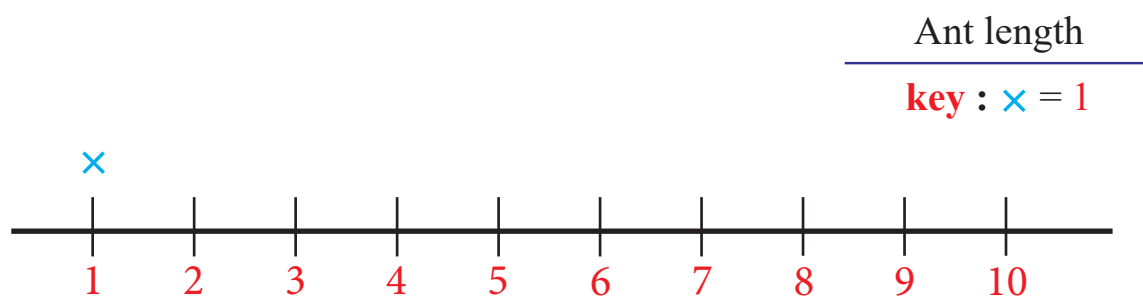
**Solution :** Draw a number line

We write on it the numbers 1, 2, 3, ....., 10

where the scale is ( skip by 1 )

(The numbers represent the length of the ants under study)

We repeat placing the sign  $\times$  over each number by repeating the same length ,  
where the key is  $\times = 1$



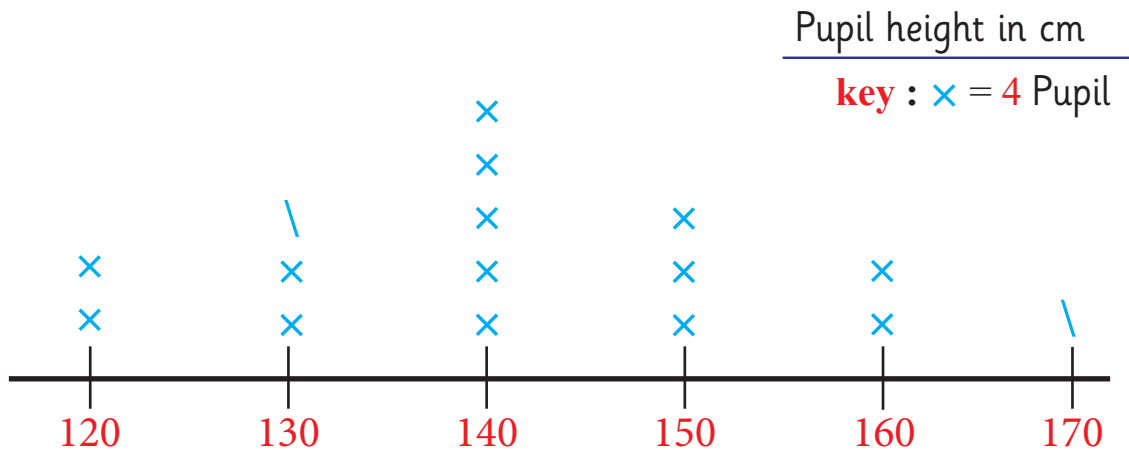
# Unit 3

Practice

3

Using the line plot to answer the following :

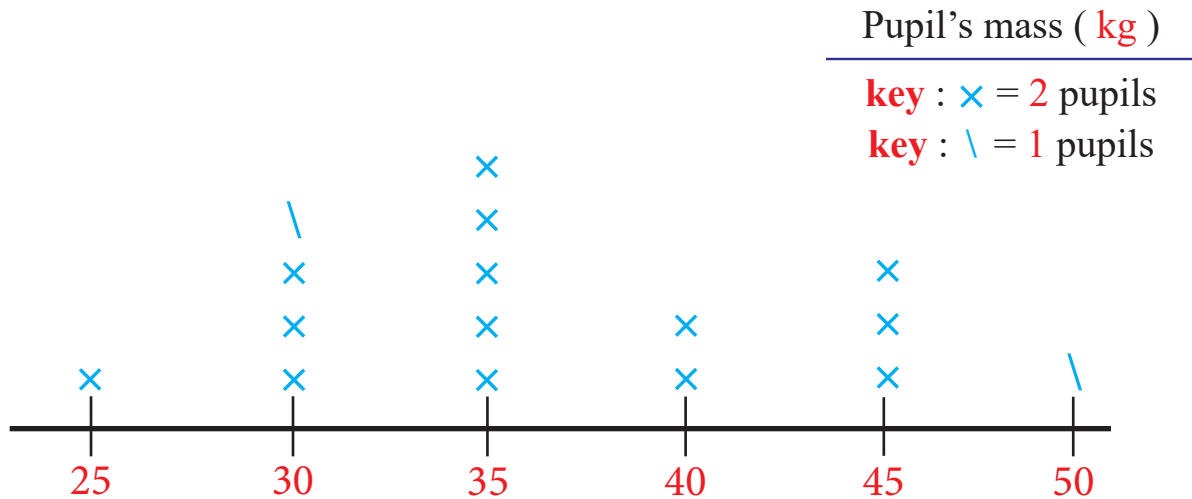
( Pupil height in cm )



- a) What is the key of drawing? The symbol  $\times$  represents ..... pupil and the symbol  $\backslash$  represents ..... pupil
- b) What is the scale of a number line? 120, 130, 140, ..... skip by .....
- c) How many pupils are 160 cm tall? ..... Pupil
- d) How many pupils whose height is 150 cm or more? ..... Pupil
- f) How many pupils are less than 170 cm tall? ..... Pupil
- g) What is the length of the greatest number of pupils? ..... cm
- h) How many pupils whose height is 160 cm or more?  
..... Pupil
- i) How many pupils are more than 130 cm tall and less than 160 cm tall? ..... Pupil

## Self - check on lesson ( 7 )

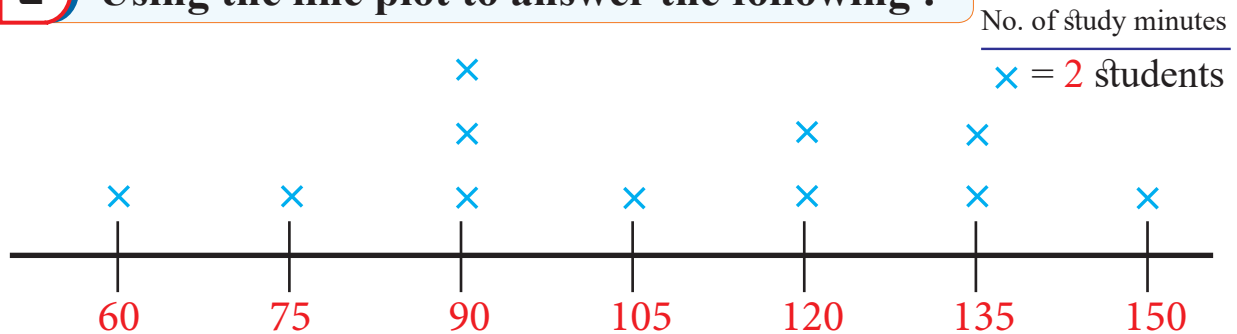
- 1** Using the graph, answer the following  
(The pupil's mass in kilograms) :



- (a) What is the key of drawing? The symbol  $\times$  represents ..... Pupils  
and the symbol  $\backslash$  represents ..... Pupils
- (b) What is the scale of a number line? 25, 30, 35, ..... skip by .....
- (c) How many pupils have a mass of 35 kg? .....
- (d) How many pupils have a mass of 40 kg or less? .....
- (e) How many pupils have a mass of less than 40 kg? .....
- (f) What is the mass of the least number of pupils? .....
- (g) How many pupils have a mass more than 35 kg? .....
- (h) How many pupils have a mass more than 30 kg and  
less than 45 kg? .....

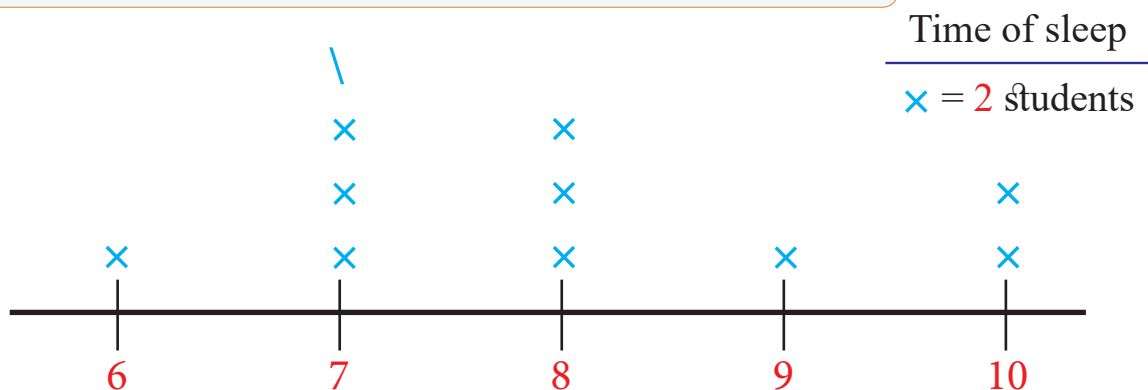
## Unit 3

### 2 Using the line plot to answer the following :



- What is measured? The number of study minutes for students
- What is the scale of a number line? 60, 75, 90, ..... skip by .....
- What is the least time a student spend in studying? .....

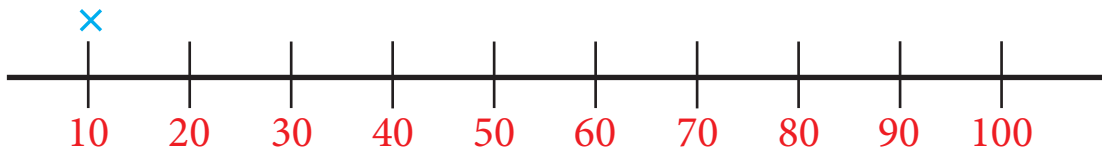
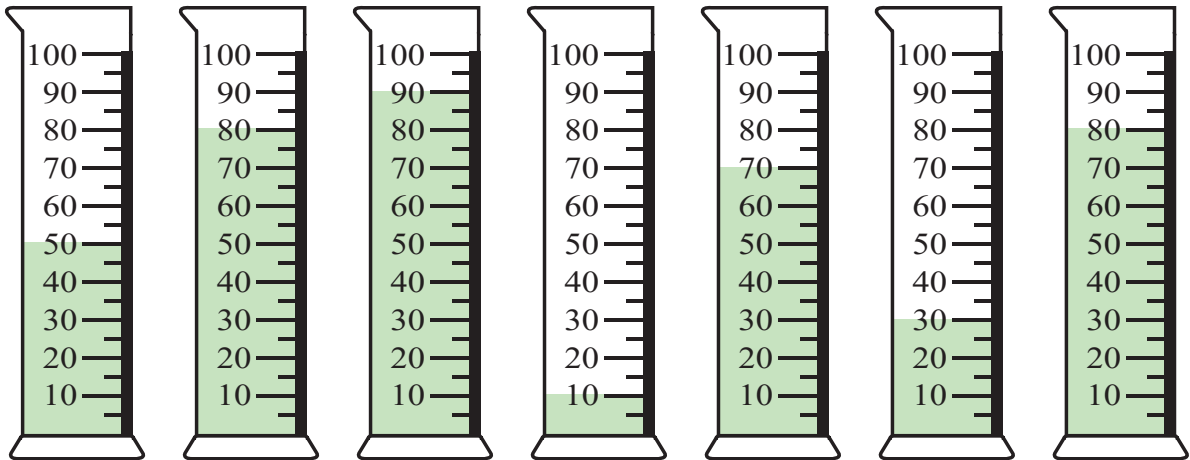
### 3 Use the line plot to answer the following :



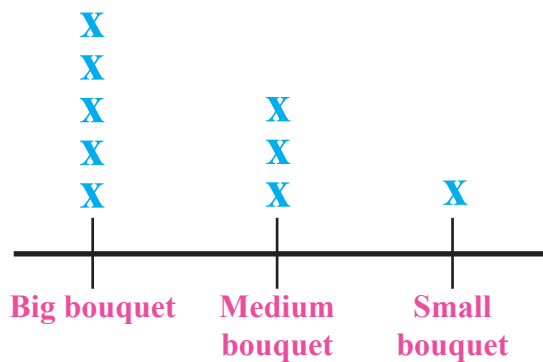
- What is measured? Number of hours .....
- What is the scale of a number line?  
6, ....., ....., ....., ..... skip by .....
- What is the greatest time students spend in sleeping? .....
- How many students who sleep more than 8 hours? .....
- How many students sleep for a quarter of a day? .....



- 4** Use the line plot to represent the following graduated cylinder with the quantities in them :



- 5** Use the line plot , answer the following :



Bouquets of roses sold

$\times = 5$  packages

- (a) How many big bouquets are sold? ..... bouquet  
 (b) How many small bouquets are sold? ..... bouquet  
 (c) What is the total number of all bouquets sold?

the total number = .....  $\times$  ..... = ..... bouquet

## Measuring the world around me

Lesson

8, 9

**Practice 1** In the colony, the ants collect 950 grams of food. If the ants consume 25 grams of food on Monday, 37 grams of food on Tuesday.

**Calculate how many grams of food are left?**

**Solution :** Used food = 25 gm + 37 gm = ..... gm

Left food = 950 gm - ..... gm = ..... gm

**Practice 2** Aya bought potatoes with a mass of 2 kg and 920 grams. And she bought onions it's mass Less than the mass of potatoes by 1075 grams.

**What is the mass of potatoes and onions together?**

**Solution :** Mass of potatoes = 2 kg , 920 gm = ..... gm

Mass of onions = ..... gm - 1075 gm = ..... gm

Mass of potatoes and onions = ..... gm + ..... gm

= ..... gm

**Practice 3** A pharaonic ant takes to grow from the egg stage to become an adult ant 45 days. It takes a wood ant to grow from the egg stage to become Adult ant 12 weeks.

What kind takes longer to grow?

What is the time difference between them?

**Solution :** 12 weeks = ( 12 × ..... ) = ..... days

**So :** time of ..... ant > time of ..... ant

The difference = ..... day - ..... day = ..... day

**Practice 4** An ant from colony A walked 1 km in one day. An ant from colony B walked 3000 meters in one day.  
Which of the two ants went faster?  
What is the difference in distance in kilometres?

**Solution :** 1 km = 1 × ..... = ..... m

**So :** the distance of ..... > the distance of .....

The difference = ..... m - ..... m = ..... m = ..... km  
( ÷ 1000 )

**Practice 5** Zina bought 8 kg of sugar , 10 kg of flour, 500 grams of cocoa, 225 grams of nuts and 275 grams of coconut.  
What is the total mass of what Zina bought in kilograms?

**Solution :** 8 kg = 8 × ..... = ..... gm

10 kg = 10 × ..... = ..... gm

The total mass = ..... + ..... + ..... + ..... + .....  
= ..... gm

The total mass in kg = ..... kg ( ÷ 1000 )

**Practice 6** Taher's height increased by 10 centimetres in one year. he is now 1 meter and 6 centimetres long.  
How tall was Taher in centimetres one year ago?

**Solution :** 1 m , 6 cm = ( 1 × ..... ) cm + ..... cm = ..... cm

Taher tall one year ago in centimetres = ..... cm - 10 cm  
= ..... cm

## Unit 3

**Practice 7** A fish tank has a capacity of 100 litres. 20000 millilitres of water is poured into it. How many litres of water do we need to fill the tank completely?

**Solution :** The volume of the spilled water 20000 ml = ..... litres  
 Water we need = 100 litre – ..... litre = ..... litre

**Practice 8** Karim's cat has a mass of 7 kilograms and his dog's mass is 17 kilograms. When Karim took them to the vet, he learned that his cat gained 450 grams and his dog increased 120 grams. What is the total mass of the two animals together now?

**Solution :** Mass of cat = 7 kg + 450 gm = ..... gm + ..... gm = ..... gm  
 Mass of dog = 17 kg + 120 gm = ..... gm + ..... gm = ..... gm  
 Mass of cat and dog together = ..... gm + ..... gm = ..... gm

**Practice 9** Professor Emad bought four bottles of carbonated water (one of which has a capacity of two litres) for a picnic for the fourth grade of primary school. If there are two litres and 829 millilitres of carbonated water left at the end of the picnic, how many millimetres of carbonated water did the students drink?

**Solution :** 4 bottles (capacity 2 litres) = ( 4 × ..... ) litres = ..... ml  
 2 litres , 829 ml = ..... ml + ..... ml = ..... ml  
 The students drink = ..... ml – ..... ml = ..... ml

**Practice 10** A worker ant takes short naps to replenish its energy, up to 250 minutes per day. The queen of ants can sleep up to 9 hours a day. Which ant sleeps the longest and what is the difference between them?

**Solution :** 9 hr = 9 × ..... = ..... min

**So :** ant ..... > ant .....

The difference = ..... min – ..... min ..... min  
= 4 hr ..... min

**Remember**

$$4 \times 60 = 240$$

Hour = 60 minutes

**Practice 11** Rania measures the length of two rows of ants. The length of the colony (A) is 30 cm, and the length of the colony (B) is 500 mm. How long are the two rows of ants together in centimetres?

**Solution :** 500 mm = 500 ÷ ..... = ..... cm

The sum = ..... cm + ..... cm  
= ..... cm

**Practice 12** The mass of Dalia's dog is 15 kilograms. When she took him to the vet, she learned that its mass increased by 2000 grams. How many grams does Dalia's dog need to have a mass of 20 kilograms?

**Solution :** 2000 gm = 2000 ÷ ..... = ..... kg

The mass of Dalia's dog = 15 kg + ..... kg = ..... kg

What Dalia's dog need = 20 kg – ..... kg = ..... kg

## Self - check on lesson ( 8 , 9 )

- 1** **Bassma** bought two bottles of milk for her children, and each bottle contained two litres. If her children drank **1200** millilitres on Monday and **950** millilitres on Tuesday. How many millilitres of milk are left?

**Solution :** Volume of 2 bottles =  $4 \times \dots\dots\dots = \dots\dots\dots$  ml

The used milk =  $\dots\dots\dots$  ml +  $\dots\dots\dots$  ml =  $\dots\dots\dots$  ml

Left of milk =  $\dots\dots\dots$  ml -  $\dots\dots\dots$  ml =  $\dots\dots\dots$  ml

=  $\dots\dots\dots$  litres ,  $\dots\dots\dots$  ml

- 2** **Ziad** played video games from **3:45** pm to **5:10** pm, which he is allowed to Playing the video for only **80** minutes. Did he break the rule? If the answer is no, why? And if the answer is yes, how many extra minutes was it?

**Solution :** **80** min =  $\dots\dots\dots$  hr ,  $\dots\dots\dots$  min =  $\dots\dots\dots$  :  $\dots\dots\dots$

The time he end = **3:45** +  $\dots\dots\dots$  :  $\dots\dots\dots$  =  $\dots\dots\dots$  :  $\dots\dots\dots$

=  $\dots\dots\dots$  :  $\dots\dots\dots$  pm

Is he break the rule ? ( **yes** - **no** )

The extra minutes = **5 : 10** -  $\dots\dots\dots$  :  $\dots\dots\dots$  =  $\dots\dots\dots$  :  $\dots\dots\dots$  =  $\dots\dots\dots$  min

$\dots\dots\dots$  min =  $\dots\dots\dots$  hr ,  $\dots\dots\dots$  min

- 3** **Ahmed** has a **12** meter long piece of wood. He wants to cut it into **3** equal lengths. How long should each piece be in metres? What is the length of each piece in centimetres?

**Solution :** Length of piece =  $12 \div \dots\dots\dots = \dots\dots\dots$  m

Length of piece in cm =  $\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots$  cm

- 4** **Ayman** runs, and during training, he needs to drink **500** millimetres of water **4** times per day.  
How many litres of water will he drink in one week ?

**Solution :** He drinks in a day =  $4 \times \dots\dots\dots$  =  $\dots\dots\dots$  ml  
 He drinks in a week =  $7 \times \dots\dots\dots$  =  $\dots\dots\dots$  ml  
 =  $\dots\dots\dots$  litre (  $\div 1000$  )

- 5** **Amany** swims for half an hour every day.  
How many minutes do she spend swimming in **5** days?

**Solution :** Half an hour =  $\dots\dots\dots$  min  
 Sum of min =  $5 \times \dots\dots\dots$  =  $\dots\dots\dots$  min  
 =  $2$  hr ,  $\dots\dots\dots$  min

- 6** **Sarah** walked **5000** meters every day for **9** days.  
What is the distance in km she walked?

**Solution :** The distance she walked =  $9 \times \dots\dots\dots$  =  $\dots\dots\dots$  m  
 =  $\dots\dots\dots$  km  
 ( **Remove 3 zeros** )

- 7** **Ants** walk about **5000** meters every day.  
How many kilometres ants walk in **6** days?

**Solution :** Ant walked in **6** days =  $6 \times \dots\dots\dots$  =  $\dots\dots\dots$  m  
 =  $\dots\dots\dots$  km  
 ( **Remove 3 zeros** )

## Unit 3

**8** Which one has the largest capacity?

- (a) A milk bottle of 2500 ml or a bottle of milk of 2 litres .

**The answer :** The bottle of milk that has .....

- (b) Water heater with a capacity of 50 litres or a water heater with a capacity of 4500 millilitres .

**The answer :** The water heater that has a capacity .....

- (c) A tank with a capacity of 10 ml or A tank with a capacity of 10 litres.

**The answer :** The tank that has .....

- (d) ( Bathtub ) with a capacity of 3000 millilitres, or ( Bathtub ) with a capacity of 30 litres.

**The answer :** (the bathtub) that capacity .....

**9** **Mariam** was going for a walk with her family and counted 10 ants walking together. If each ant has a mass of one gram and carries a mass 50 times it's own body mass, what is the total mass carried?

**Solution :** The mass that one ant carries =  $50 \times \dots = \dots$  gm

The total mass loaded =  $10 \times \dots = \dots$  gm

**10** An ant can walk to 5 km per day. If the ant keeps walking for 20 days , what is the distance it will walk in metres?

**Solution :** 5 km =  $5 \times \dots = \dots$  m

Total distance =  $20 \times \dots = \dots$  m



**11** Complete the following :

(a) 3 litre = ..... ml

(b) 50 kg = ..... gm

(c) 10000 m = ..... km

(d) 7000 ml = ..... litre

**12** **Samira** studies for the next math test. If **Samira** studies for **30** minutes a day. How many hours will she spend studying in **8** days?

**Solution :** Total time =  $8 \times \dots\dots\dots = \dots\dots\dots$  min  
 $= \dots\dots\dots$  hr

(  $\div 60$  )

**13** A colony of ants eat approximately **2000** grams of food every day. If ants have **10** kg of food stored, How many days do ants consume this amount of food?

**Solution :**  $2000 \text{ gm} = 2000 \div \dots\dots\dots = \dots\dots\dots$  kg

Number of days =  $10 \div \dots\dots\dots = \dots\dots\dots$  day

**14** **Ehab** exercises weight lifting with a mass of **100** kg, **Ehab** wants to increase it's mass by **500** grams per week. If this continues for **5** weeks, what will be his mass in the end?

**Solution :**  $100 \text{ kg} = 100 \times \dots\dots\dots = \dots\dots\dots$  gm

The increase mass =  $5 \times \dots\dots\dots = \dots\dots\dots$  gm

The total mass =  $\dots\dots\dots \text{ gm} + \dots\dots\dots \text{ gm} = \dots\dots\dots \text{ gm}$

$= \dots\dots\dots \text{ kg} , \dots\dots\dots \text{ gm}$

## Self - check 1 Chapter 3

### 1 Convert to the suitable units :

- (a)  $7 \text{ km} + 3000 \text{ m} = \dots\dots\dots \text{ km} .$
- (b)  $250 \text{ litre} + 3450 \text{ ml} = \dots\dots\dots \text{ litre} , \dots\dots\dots \text{ ml} .$
- (c)  $120 \text{ min} = \dots\dots\dots \text{ hr}$
- (d)  $8 \text{ kg} - 3000 \text{ gm} = \dots\dots\dots \text{ gm} .$
- (e)  $5 \text{ min} = \dots\dots\dots \text{ seconds} .$
- (f)  $27 \text{ litre} + 27 \text{ ml} = \dots\dots\dots \text{ ml} .$
- (g)  $9 \text{ kg and } 20 \text{ gm} + 20 \text{ kg and } 90 \text{ gm} = \dots\dots\dots \text{ gm}$
- (h)  $6 \text{ litre} - 300 \text{ ml} = \dots\dots\dots \text{ ml} .$
- (i)  $15 \text{ m} - 15 \text{ cm} = \dots\dots\dots \text{ cm}$
- (j)  $3 : 35 + 3 : 59 = \dots\dots : \dots\dots = \dots\dots : \dots\dots$

### 2 Put ( $>$ , $<$ , $=$ ) :

- |  |   |
|--|---|
| (a) 50 litre <input type="text"/> 500 ml | (b) 8000 gm <input type="text"/> 8 kg   |
| (c) 300 gm <input type="text"/> 7000 gm  | (d) 365 day <input type="text"/> 366 hr |
| (e) 7 hr <input type="text"/> 420 min    | (f) 3 cm <input type="text"/> 3 dm      |
| (g) 4000 m <input type="text"/> 5 km     | (h) 200 gm <input type="text"/> 2 kg    |

**3 Arrange the following :**

- (a) 3 hr , 20 min , half an hour , 90 min , quarter an hour.

**In a descending order :** ..... , ..... , ..... , ..... , ..... .

- (b) 500 m , 500 mm , 500 cm , 500 km , 500 dm

**In a descending order :** ..... , ..... , ..... , ..... , ..... .

- (c) 1000 ml , 3000 litre , 70 litre , 70 ml , 7 litre

**In an ascending order :** ..... , ..... , ..... , ..... , ..... .

- (d) 4500 gm , kilogram and quarter , 5 kg , 7 kg , 300 gm

**Solution :** Kilogram and quarter = ..... gm , 5 kg = ..... gm



7 kg = ..... gm

**In an ascending order :** ..... , ..... , ..... , ..... , ..... .

**4 Answer the following :**

- (a) The swimmer goes 4 days a week to train 3 hours a day.  
How many hours does he train in 5 weeks?

**Solution :** .....  
.....

- (b) Habiba used to ride her bike. And one day she started riding a bike at  and this sport ended at .

How long did she take to ride a bike?

..... min = ..... hr , ..... min

**Solution :** .....  
.....

## Self - check 2 on the previous units

### 1 Complete the following :

- (a) 540000 = ..... thousands.
- (b) The increase of 3000 than 1000 = .....
- (c)  $\frac{1}{2}$  million = .....
- (d) The greatest number of 3, 5, 0, 4, 1 is .....
- (e) Number 4008 in word form is .....
- (f) When multiply a digit in the hundred place by 10 ,  
it move to ..... place.
- (g) 100000000 ..... 99999999

### 2 Write the equation and find the value of the variable in each case :

(a) 

Y	
4352	1096

**Equation :** .....

**Solution :** .....

(b) 

4000	
X	357

**Equation :** .....

**Solution :** .....

### 3 Complete the following :

- (a) 3 hr = ..... min .
- (b) 40 min = ..... second .
- (c)  $\frac{1}{2}$  hr , 5 min = ..... min .
- (d) 3 days = ..... hr .
- (e) 5 weeks = ..... days .

#### Remember

1 weeks = 7 days

1 days = 24 hr

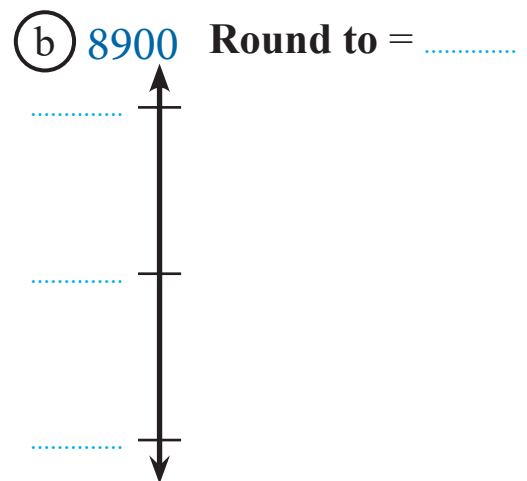
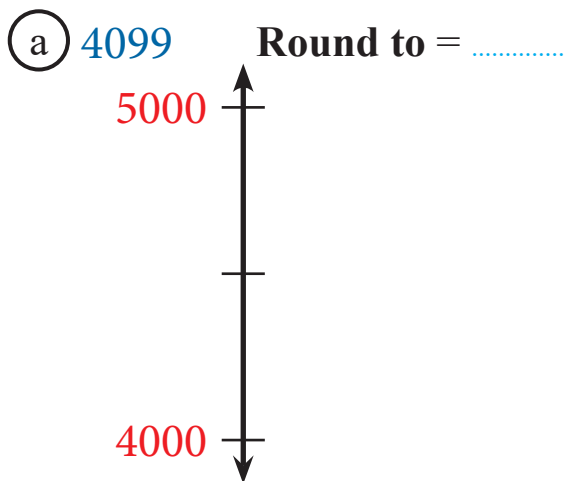
1 hr = 60 min

1 min = 60 second

**4 Complete :**

- (a) 10 kg , 150 gm = ..... gm + ..... gm = ..... gm  
 (b) 10 m , 35 cm = ..... cm + ..... cm = ..... cm  
 (c) 20 litre, 350 ml = ..... ml + ..... ml = ..... ml  
 (d) 20 dm , 7 cm = ..... cm + ..... cm = ..... cm  
 (e) 3560 gm = ..... kg + ..... gm  
 (f) 4725 cm = ..... m + ..... cm  
 (g) 6715 ml = ..... litre + ..... ml

**5 Determine the midpoint and round to the nearest (1000) :**



**6 Find the result of the following :**

$$\begin{array}{r} 278393 \\ + 302145 \\ \hline \end{array}$$

$$\begin{array}{r} 516501 \\ + 428409 \\ \hline \end{array}$$

$$\begin{array}{r} 645293 \\ - 162480 \\ \hline \end{array}$$

For more exercises follow Self- check on Syllabus in the second part

# Perimeter and area

## Unit Four



Array	مصفوفة
Angles	زاوية
Barn	مزرعة
Blanket	بطانية
Camp	مخيم
Different	مختلف
Double	ضعف
Edge	حافة
Fence	سور
Frame	إطار
Green field	ملعب أخضر
In front of	أمام

Law	قانون
Length	طول
Missing	مجهول
Mural	لوحة جدارية
Odd shapes	أشكال غير منتظمة
Quadrilateral	شكل رباعي
Right	قائمة
Sand field	ملعب رملي
Tent	خيمة
Tape	إطار
Width	عرض

## Content

Exercise  
inspired from  
Math Journal

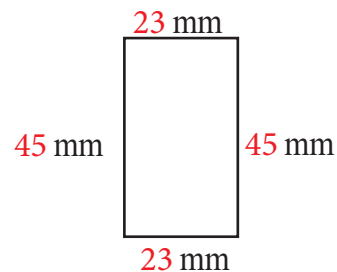
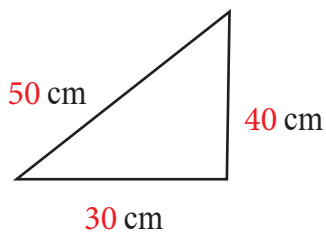
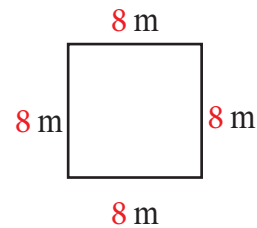
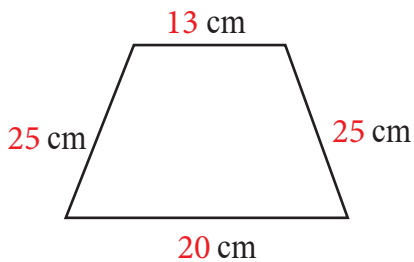
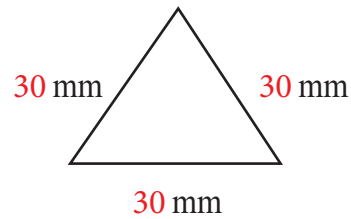
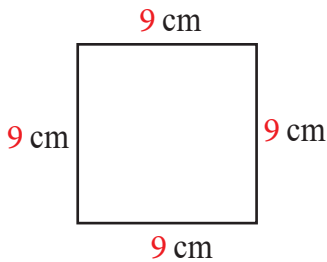
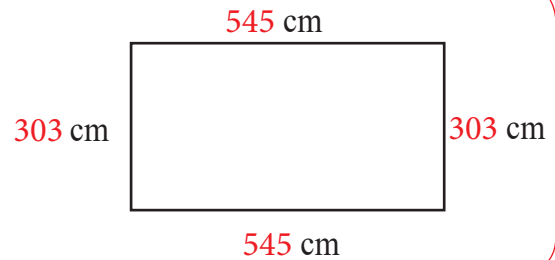
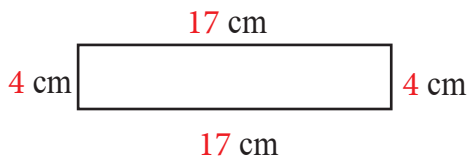
Exercise  
on lessons

Self-Check  
on the unit

## Marching Ants ( The Perimeter -The area )

### Activity 1 Note and colour :

- Colour the rectangles with **red**, squares with **blue**, and triangles with **green**, leave the rest uncoloured.



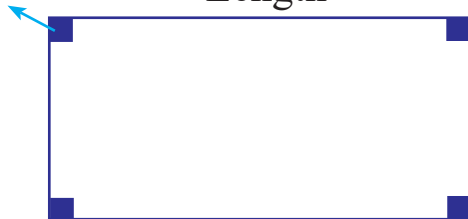
## Unit 4

### Rectangle

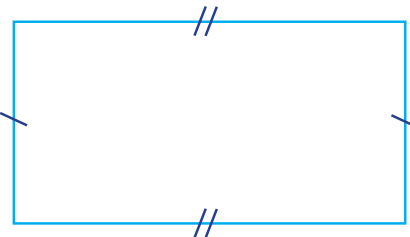
It is a **quadrilateral** : It has four sides and four angles, and each of its angles is right. each two opposite sides are equal in length.

Right angle

Length



Width



Note

Perimeter of any polygon = The sum of the lengths of its sides

Perimeter of rectangle =  $L + W + L + W$

or Perimeter of rectangle =  $(L + W) \times 2$



$$L = \frac{P}{2} - W$$

$$W = \frac{P}{2} - L$$

Bar model

Half the perimeter

W

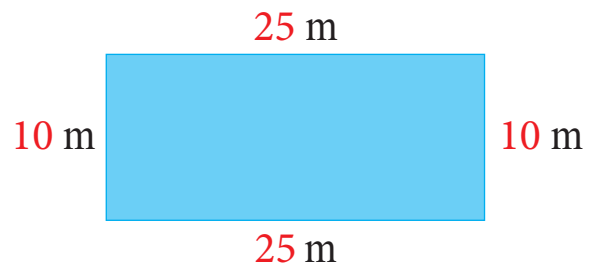
L

Activity

2

Find the perimeter of the following rectangle in two different ways :

Solution



The perimeter = sum of sides

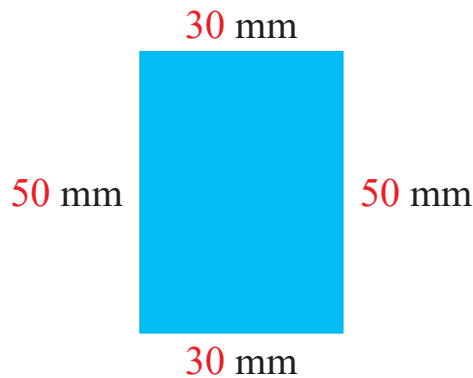
$$\begin{aligned} \text{The perimeter} &= 25 + 10 + 25 + 10 \\ &= \dots \text{ m} \end{aligned}$$

The perimeter =  $(L + W) \times 2$

$$\begin{aligned} \text{The perimeter} &= (25 + 10) \times 2 \\ &= \dots \text{ m} \end{aligned}$$



**Practice 1** Find the perimeter of the following rectangle :



**Solution :**

The perimeter = sum of sides

The perimeter

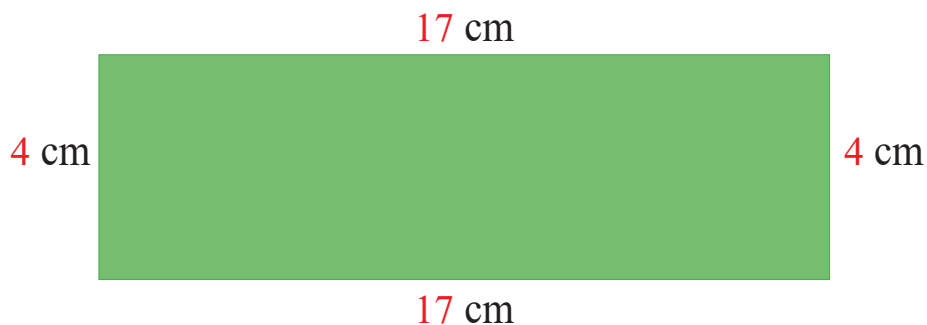
$$= \dots + \dots + \dots + \dots = \dots \text{ mm}$$

The perimeter =  $(L + W) \times 2$

The perimeter =  $(\dots + \dots) \times 2$

$$= \dots \text{ mm}$$

**Practice 2** Find the perimeter of the following rectangle in two different ways :



**Solution :**

The perimeter = sum of sides

The perimeter

$$= \dots + \dots + \dots + \dots = \dots \text{ cm}$$

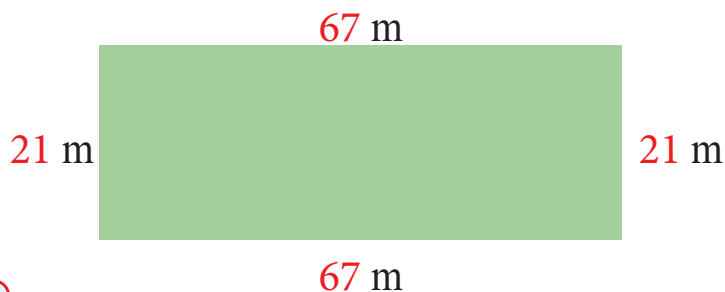
The perimeter =  $(L + W) \times 2$

The perimeter =  $(\dots + \dots) \times 2$

$$= \dots \text{ cm}$$

## Unit 4

**Practice 3** Find the perimeter of the following rectangle in two different ways :



### Solution

The perimeter = sum of sides

The perimeter

$$= \dots + \dots + \dots + \dots = \dots \text{ m}$$

The perimeter =  $(L + W) \times 2$

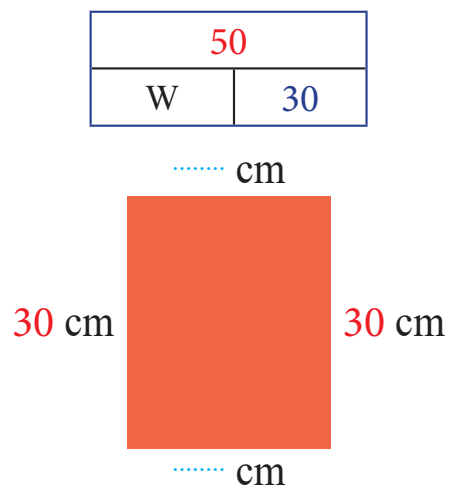
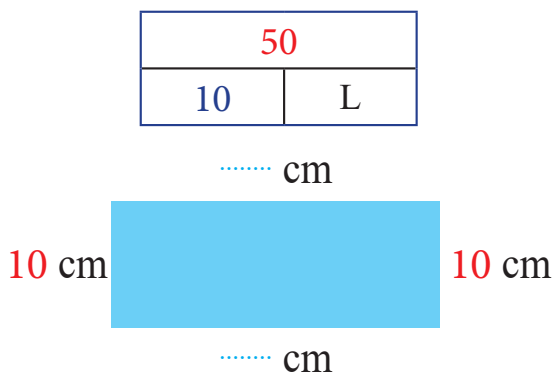
The perimeter =  $(\dots + \dots) \times 2$   
=  $\dots \text{ m}$

**Practice 4** The wood ant walked in a perimeter of 100 centimetres. Draw two different rectangles that can represent it's way.

### Solution

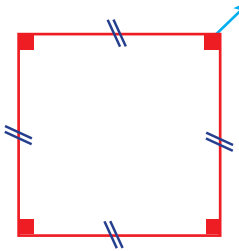
Find half the perimeter =  $(L + W) = 50 \text{ cm}$

Put any number as L . then reverse



**A square** is a rectangle with equal side

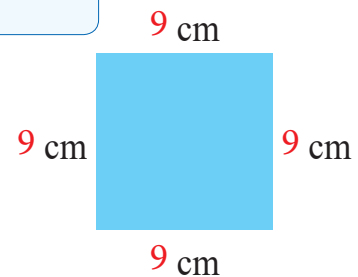
Right angle



**Perimeter of square** = side length + itself + itself + itself  
or **Perimeter of square** = side length  $\times 4$

Side length of square = The perimeter  $\div 4$

**Activity 3** Find the perimeter of the following square in two different ways :



**Solution**

Perimeter of square = the sum of it's sides

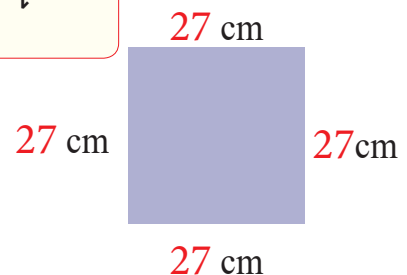
Perimeter of square

$$= \dots + \dots + \dots + \dots = \dots \text{ cm}$$

Perimeter of square = side length  $\times 4$

$$\begin{aligned} \text{Perimeter of square} &= \dots \times 4 \\ &= \dots \text{ cm} \end{aligned}$$

**Practice 5** Find the perimeter of the following square in two different ways :



**Solution**

Perimeter of square = the sum of it's sides

Perimeter of square

$$= \dots + \dots + \dots + \dots = \dots \text{ cm}$$

Perimeter of square = side length  $\times 4$

$$\begin{aligned} \text{Perimeter of square} &= \dots \times 4 \\ &= \dots \text{ cm} \end{aligned}$$

## Self-check on lesson (1)

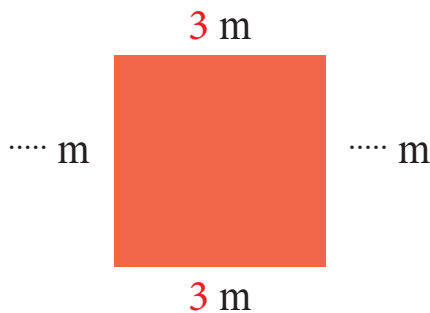
- 1** Adam built a fence for goats with a perimeter of 12 meters. What are the two methods that can be used in construction?

**Solution :**

Find half the perimeter =  $(L + W) = \dots\dots\dots$  m

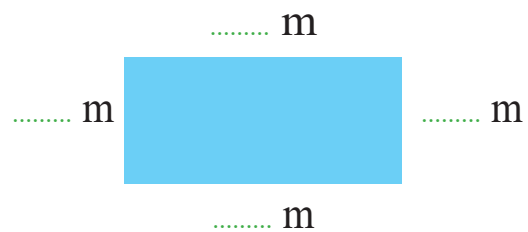
$$L = 3 \text{ m}$$

$$W = \dots\dots\dots \text{ m}$$



$$L = \dots\dots\dots \text{ m}$$

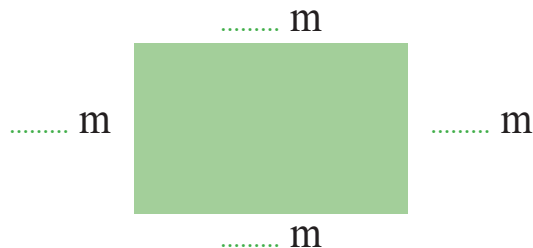
$$W = \dots\dots\dots \text{ m}$$



- 2** The football team wants to surround part of the field with ropes to play football. to get rectangular shape ,105 meters long and 68 meters wide. What length of rope will they need for this part of the field?

$$L = \dots\dots\dots \text{ m}$$

$$W = \dots\dots\dots \text{ m}$$



**Solution**

The perimeter = sum of sides

The perimeter

$$= \dots\dots + \dots\dots + \dots\dots + \dots\dots = \dots\dots \text{ m}$$

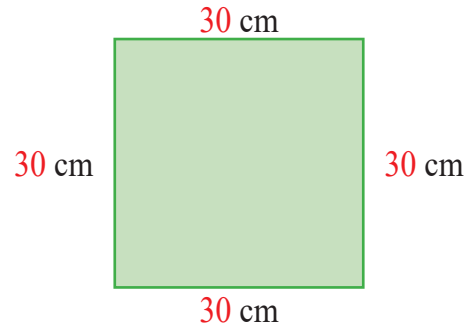
The perimeter =  $(L + W) \times 2$

The perimeter =  $(\dots\dots + \dots\dots) \times 2$

$$= \dots\dots \text{ m}$$

- 3** Sara draws a line around a square cake. The length of one side of cake is **30** centimetres. How long is the line that Sara draws around the cake?

The length = ..... cm



**Solution**

Perimeter of square = the sum of it's sides

Perimeter of square

$$= \dots + \dots + \dots + \dots = \dots \text{ cm}$$

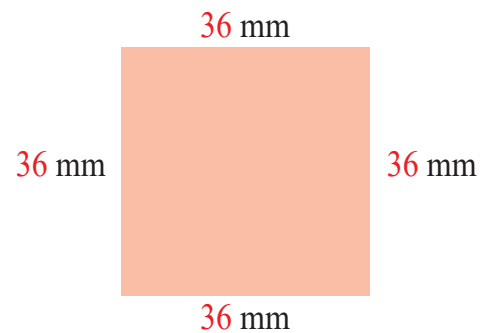
Perimeter of square = side length  $\times 4$

Perimeter of square =  $\dots \times 4$

$$= \dots \text{ cm}$$

- 4** Sheriff makes a square picture frame. Each side will be **36** millimetres long. What is the perimeter of the frame in two different ways?

Perimeter = ..... mm



**Solution**

Perimeter of square = the sum of it's sides

Perimeter of square

$$= \dots + \dots + \dots + \dots = \dots \text{ mm}$$

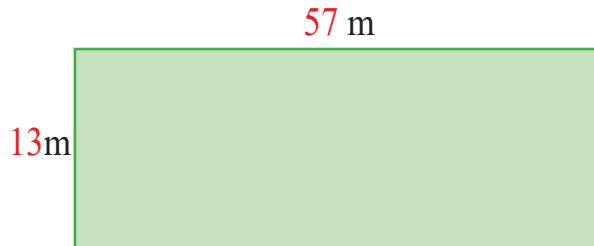
Perimeter of square = side length  $\times 4$

Perimeter of square =  $\dots \times 4$

$$= \dots \text{ mm}$$

## Unit 4

- 5** Find the perimeter of the following rectangle in two different ways :



**Solution**

The perimeter = sum of sides

The perimeter

$$= \dots + \dots + \dots + \dots = \dots \text{ m}$$

The perimeter =  $(L + W) \times 2$

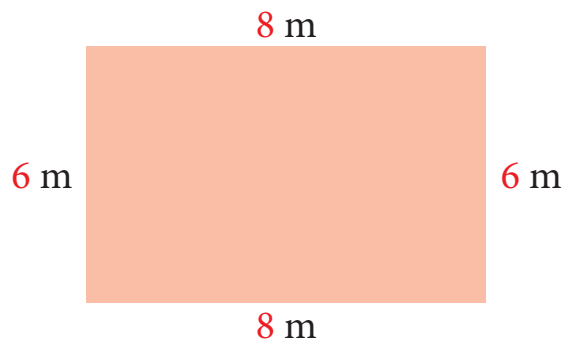
The perimeter =  $(\dots + \dots) \times 2$

$$= \dots \text{ m}$$

- 6** Omar builds a rectangular fence around his garden. It is 8 meters long and 6 meters wide. What is the perimeter of the garden?

The length =  $\dots$  m

The width =  $\dots$  m



**Solution**

The perimeter = sum of sides

The perimeter

$$= \dots + \dots + \dots + \dots = \dots \text{ m}$$

The perimeter =  $(L + W) \times 2$

The perimeter =  $(\dots + \dots) \times 2$

$$= \dots \text{ m}$$

## The area

**Activity 1** Remember then complete each group of the following :

①  $6 \times 30 = 180$  ( We multiply  $6 \times 3 = 18$  hen put **zero** at right of **18** )

(a)  $4 \times 90 = \dots\dots$

(b)  $80 \times 4 = \dots\dots$

(c)  $30 \times 5 = \dots\dots$

(d)  $70 \times 7 = \dots\dots$

②  $7 \times 500 = 3500$  ( We multiply  $7 \times 5 = 35$  then put **00** at right of **35** )

(a)  $6 \times 700 = \dots\dots$

(b)  $400 \times 4 = \dots\dots$

(c)  $200 \times 8 = \dots\dots$

(d)  $90 \times 30 = \dots\dots$

③  $3 \times 4000 = 12000$  ( We multiply  $3 \times 4 = 12$  then put **000** at right of **12** )

(a)  $4000 \times 7 = \dots\dots$

(b)  $9000 \times 8 = \dots\dots$

(c)  $3000 \times 5 = \dots\dots$

(d)  $6 \times 7000 = \dots\dots$

(a)  $5 \times 14 = 5 \times (10 + 4) = (5 \times 10) + (5 \times 4)$   
 $= \dots\dots + \dots\dots = \dots\dots$

(b)  $7 \times 15 = 7 \times (10 + 5) = (\dots \times \dots) + (\dots \times \dots)$   
 $= \dots\dots + 35 = \dots\dots$

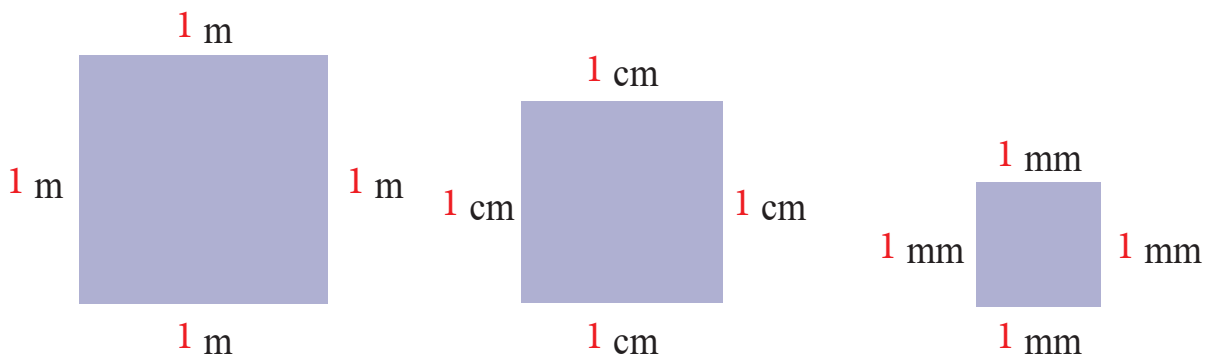
(c)  $9 \times 13 = 9 \times (10 + 3) = (\dots \times \dots) + (\dots \times \dots)$   
 $= \dots\dots + 27 = \dots\dots$

# Unit 4

**Activity 2** Find the result of the following using one strategy :

Problem	Choose one strategy	Solution
$19 + 12$	Replace to get special value	$19 + 1 + 11$ $= \dots + \dots = \dots$
$18 + 5$	Count from small to big	
$26 + 25$	Compose and decompose ( Ones with ones ) and ( tens with tens )	

**Activity 3** Know the square units :



**Square metre**  
area of a square  
with side 1 metre ,  
and write in symbol  
as  $1 \text{ m}^2$

**Square centimetre**  
area of a square  
with side 1 centimetre  
and write in symbol  
as  $1 \text{ cm}^2$

**Square millimetre**  
area of a square  
with side 1 millimetre,  
and write in symbol  
as  $1 \text{ mm}^2$

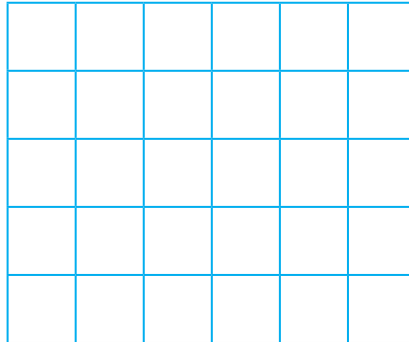
**Notice the difference**

- ◆ Units of measuring perimeter are : length unit , mm, cm, dm ,m, km
- ◆ Units of measuring area : square units ,  $\text{mm}^2$ ,  $\text{cm}^2$ ,  $\text{dm}^2$ ,  $\text{m}^2$ ,  $\text{km}^2$





**Practice 1** Find the area of figure in two different ways :



**First method**

Number of small square

The area = ..... square unit

**Second method**

Using array

No. of rows = .....

No. of columns = .....

The area = .....  $\times$  ..... = ..... square unit

**Practice 2** Find the area of the following shaded shapes :

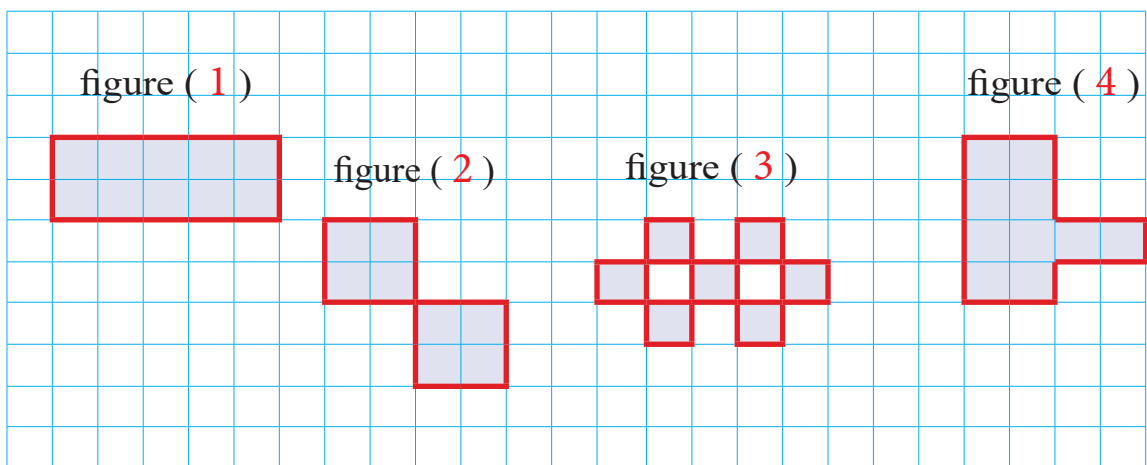


Figure (1) = ..... square units

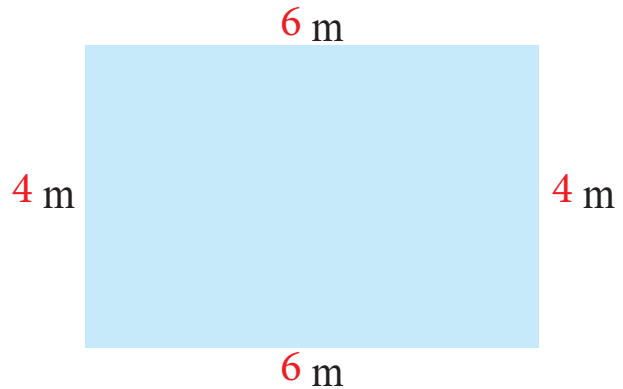
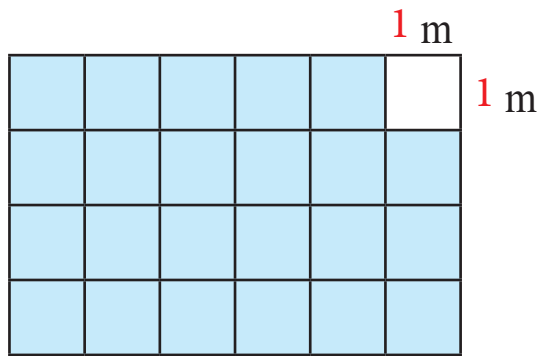
Figure(2) = ..... square units

Figure (3) = ..... square units

Figure(4) = ..... square units

## Unit 4

**Activity 4** Notice the partition of the rectangle and calculate its area :



**Array strategy**

$$\begin{aligned}\text{Area of rectangle} &= \text{No. of Row} \times \text{No. of column} \\ &= 6 \times 4 = 24 \text{ square meter}\end{aligned}$$

**Number of units**

$$\text{Area of rectangle} = 24 \text{ square unit}$$

**Laws strategy**

$$\begin{aligned}\text{Area of rectangle} &= L \times W \\ &= 6 \times 4 = 24 \text{ square meter}\end{aligned}$$

**Area of rectangle law**

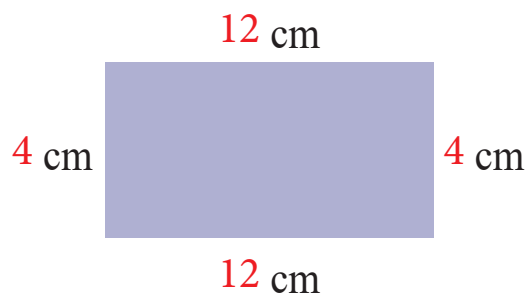
$$\text{Area of rectangle} = \text{length} \times \text{width}$$



**Practice 3** Find the area of the rectangle :

$$\text{Area of rectangle} = L \times W$$

$$\begin{aligned}\text{Area of rectangle} &= \dots + \dots \\ &= \dots \text{ cm}^2\end{aligned}$$

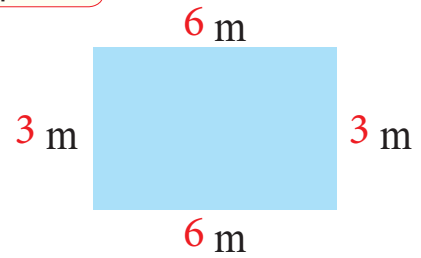


**Practice 4** Find the area of the following shapes :

(a)

Area of rectangle =  $L \times W$

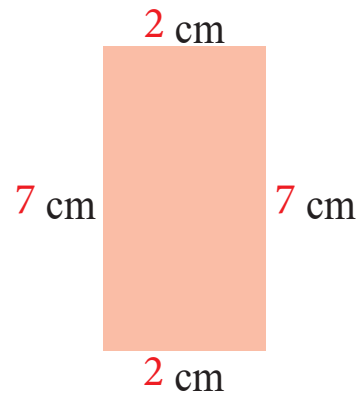
Area of rectangle = .....  $\times$  .....  
= ..... square meter



(b)

Area of rectangle =  $L \times W$

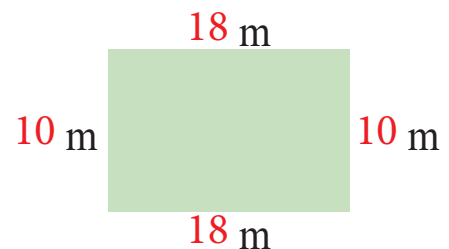
Area of rectangle = .....  $\times$  .....  
= ..... square cm



(c)

Area of rectangle =  $L \times W$

Area of rectangle = .....  $\times$  .....  
= ..... square meter

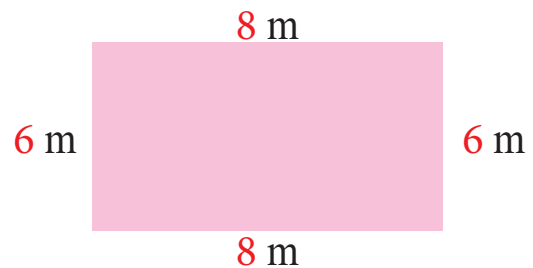


**Practice 5** In one glass company, a piece of glass is cut to cover the top of the dining table. of two dimensions is 8 meters by 6 meters.

What is the area of a piece of glass needed for the table?

Area of rectangle =  $L \times W$

Area of rectangle = .....  $\times$  .....  
= ..... square meter



## Unit 4

### Activity 5 Finding the area of a square in two different ways :

The area of rectangle  
can be used to the square

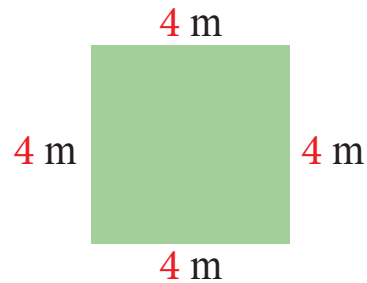
#### Solution

Area of rectangle =  $L \times W$

$$\begin{aligned}\text{Area of rectangle} &= 4 \times 4 \\ &= \dots \text{ m}^2\end{aligned}$$

Area of square = side length  $\times$  itself

$$\begin{aligned}\text{Area of square} &= 4 \times 4 \\ &= \dots \text{ m}^2\end{aligned}$$



#### Area of square law

**Area of square** = side length  $\times$  itself

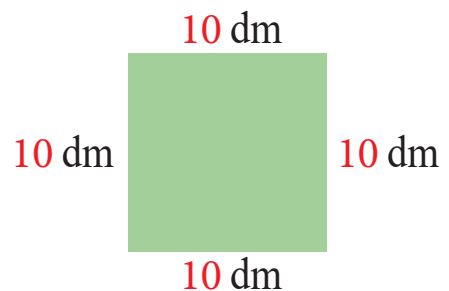


### Practice 6 Find the area of the square :

(a)

Area of square =  $S \times S$

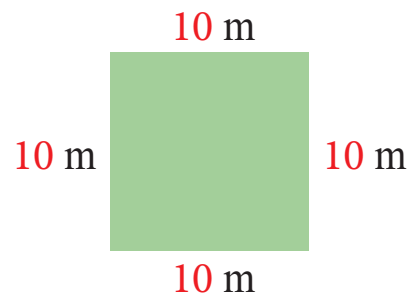
$$\begin{aligned}\text{Area of square} &= \dots \times \dots \\ &= \dots \text{ square dm}\end{aligned}$$



(b)

Area of square =  $S \times S$

$$\begin{aligned}\text{Area of square} &= \dots \times \dots \\ &= \dots \text{ square m}\end{aligned}$$

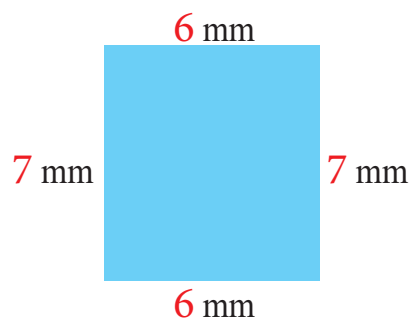


## Self - check on lesson ( 2 )

**1** Find the area of the figure :

$$\text{Area of rectangle} = L \times W$$

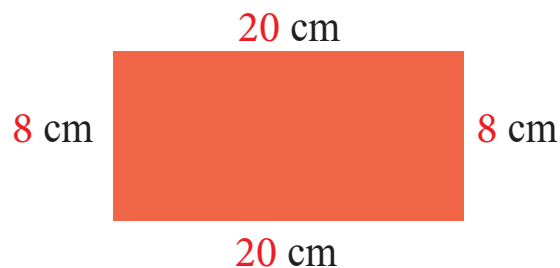
$$\begin{aligned} \text{Area of rectangle} &= \dots \times \dots \\ &= \dots \text{ mm}^2 \end{aligned}$$



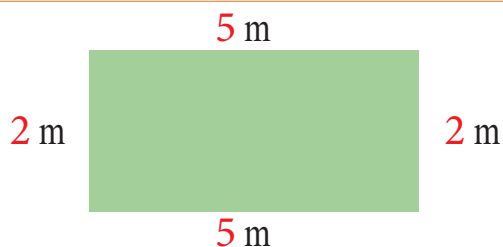
**2** A small ant farm is in the shape of a rectangle, and it's dimensions are **20** centimetres, **8** centimetres. What is the area of an ant farm?

$$\text{Area of rectangle} = L \times W$$

$$\begin{aligned} \text{Area of rectangle} &= \dots \times \dots \\ &= \dots \text{ cm}^2 \end{aligned}$$



**3** In a science project, two students build a container for an ant farm, which is **5** meters long, **2** meters wide. Find the perimeter and area of a farm?



$$\text{Perimeter of rectangle} = (L + W) \times 2$$

$$\begin{aligned} \text{Perimeter of rectangle} &= (\dots + \dots) \times 2 \\ &= \dots \text{ m} \end{aligned}$$

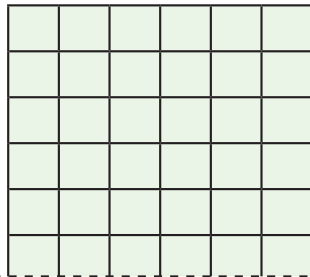
$$\text{Area of rectangle} = L \times W$$

$$\begin{aligned} \text{Area of rectangle} &= \dots \times \dots \\ &= \dots \text{ m}^2 \end{aligned}$$

## Unit 4

- 4** You have **36** squares of rugs to arrange on the floor in a rectangle. Draw two possible arrangements with measurements for length and width. What is the perimeter and the area in each arrangement?

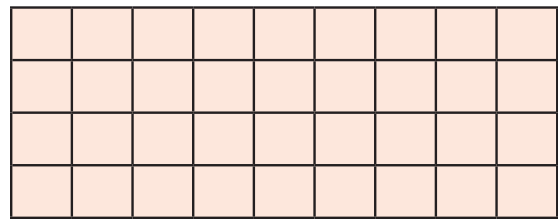
**Solution**



Length = **6** units  
Width = .... units

Perimeter of the rectangle =  
( ..... + ..... )  $\times$  2 = ..... length unit

Area of rectangle = .....  $\times$  .....  
= ..... square unit



Length = ..... units  
Width = **4** units

Perimeter of the rectangle =  
( ..... + ..... )  $\times$  2 = ..... length unit

Area of rectangle = .....  $\times$  .....  
= ..... square unit

- 5** A rectangular bakery has an area of **30** square metres. What is the perimeter of this bakery?

**Solution**

Area of rectangle = .....  $\times$  ..... = **30** m<sup>2</sup>

Length = **6** units  
Width = ..... units

Perimeter of the rectangle =  
( ..... + ..... )  $\times$  2 = ..... m

Length = ..... units  
Width = **3** units

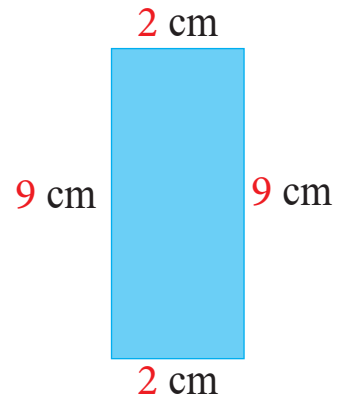
Perimeter of the rectangle =  
( ..... + ..... )  $\times$  2 = ..... m

**6** Find the area and the perimeter of the following shapes :

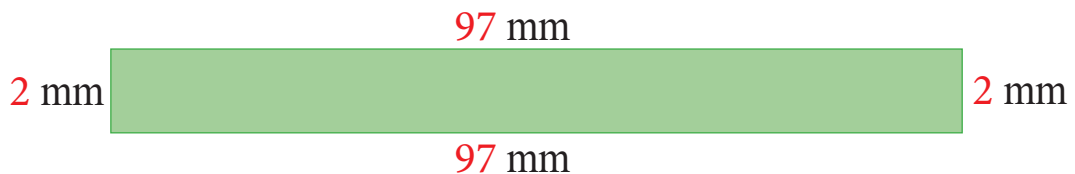
a

Perimeter of the rectangle =  
 $(\dots + \dots) \times 2 = \dots \text{ cm}$

Area of rectangle =  $\dots \times \dots$   
 $= \dots \text{ cm}^2$



b



Perimeter of the rectangle =  
 $(\dots + \dots) \times 2 = \dots \text{ mm}$

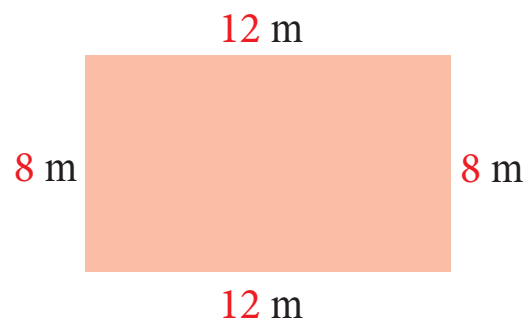
Area of rectangle =  $\dots \times \dots$   
 $= \dots \text{ mm}^2$

**7** Amir specializes in studying ants, and he found a large mound made by fire ants. Amir put a rope around the outside of a hill in the shape of a rectangle so that he could to study the hill safely. The rectangle is 8 meters wide and 12 meters long.

What is the area of the land surrounded by the rope in a square metres?

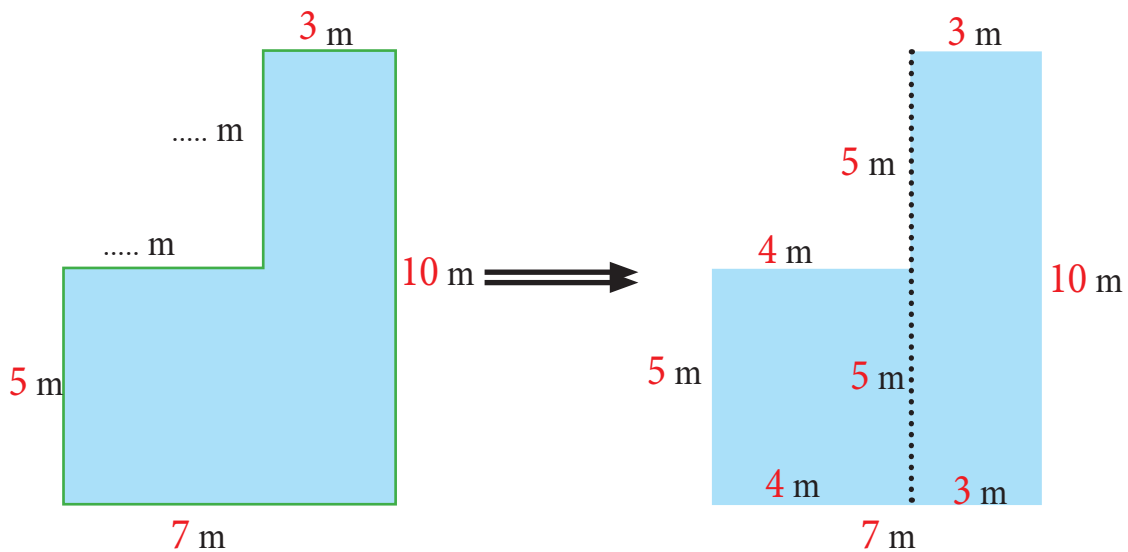
Area of rectangle =  $L \times W$

Area of rectangle =  $\dots \times \dots$   
 $= \dots \text{ m}^2$



### Something is Missing !

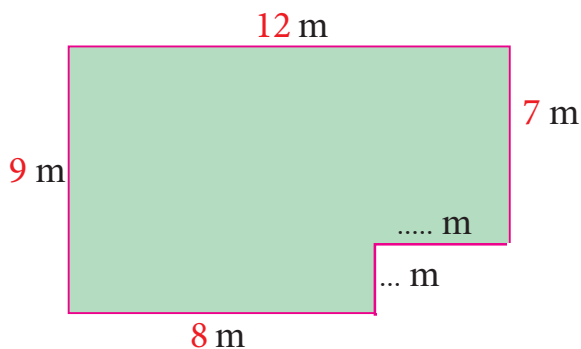
**Activity 1** Find the missing side lengths and perimeter :



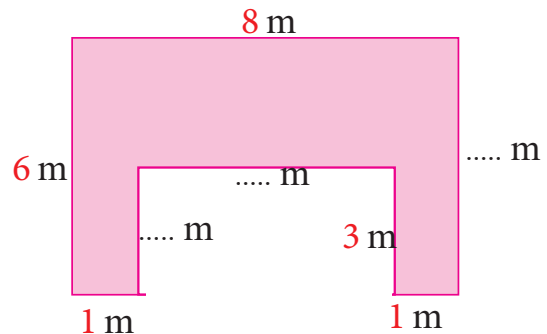
**Perimeter of a figure** = sum of its sides

$$= 7 + 10 + 3 + \dots + \dots + 5 = \dots \text{ m}$$

**Practice 1** Find the missing side lengths and the perimeter :



**Perimeter** =  $\dots$  m



**Perimeter** =  $\dots$  m



**Activity 2 Notice :**

(a) Side length of square = Perimeter of square  $\div 4$

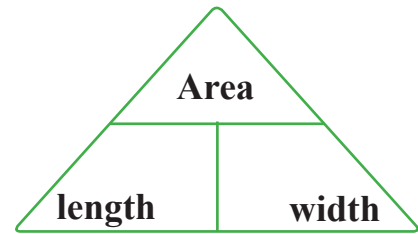
(b) Half the perimeter of the rectangle  
= length + width

Half the perimeter	
Length	Width

(c) Area of a rectangle = length  $\times$  width

Length = Area  $\div$  Width

Width = Area  $\div$  length


**Activity 3 Find the length of the missing side :**
**Solution**

We find the value of half the perimeter of the rectangle

Half the perimeter = 13	
5	Length

5 cm

..... cm

Perimeter = 26 cm

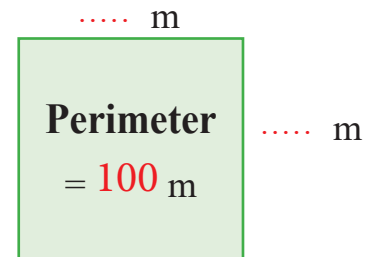
Half the perimeter of the rectangle = length + width

So: The length =  $13 - 5 = 8$  cm

**Activity 4 Find the side length of the square :**
**Solution**

Length of the square = the perimeter  $\div 4$

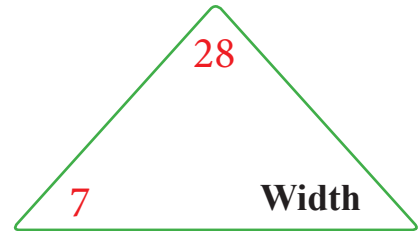
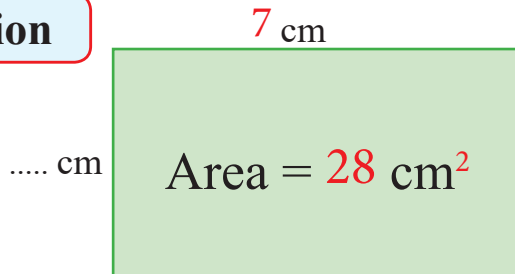
So: The length =  $100 \div 4 = 25$  m



## Unit 4

**Practice 2** Find the length of the missing side :

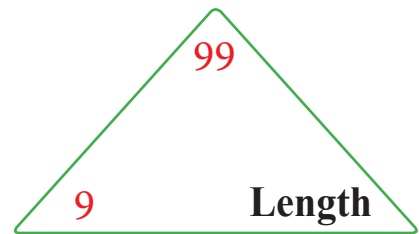
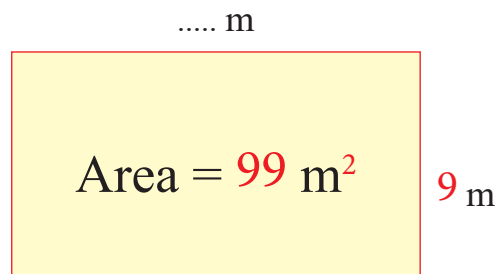
**Solution**



So : Width =  $28 \div 7 = \dots$  cm

**Practice 3** Find the length of the missing side :

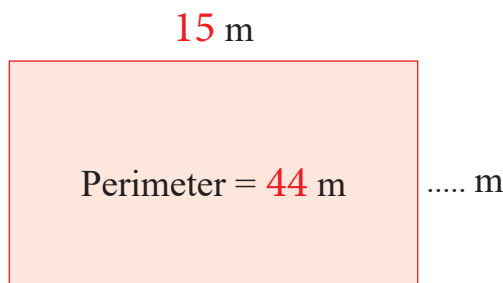
**Solution**



So : Length = ..... m

**Practice 4** Find the length of the missing side :

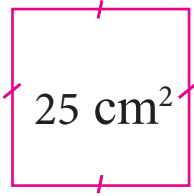
**Solution**



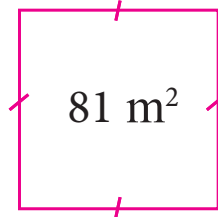
Half of perimeter = 22	
Width	15

So : Width = ..... - ..... = ..... m

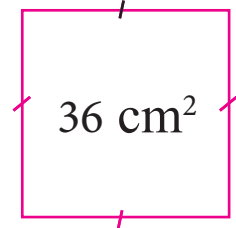
**Practice 5** Find the length of the missing side if you know the area, as the **example** :



Side length of square  
= 5 cm  
**Because**  $5 \times 5 = 25$

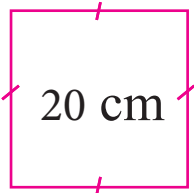


Side length of square  
= ..... m

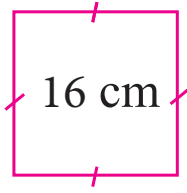


Side length of square  
= ..... cm

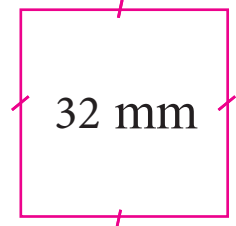
**Practice 6** Find the length of the missing side if you know the perimeter, as the example :



Side length of square  
= 5 cm  
**Because**  $20 \div 4 = 5$



Side length of square  
= ..... cm



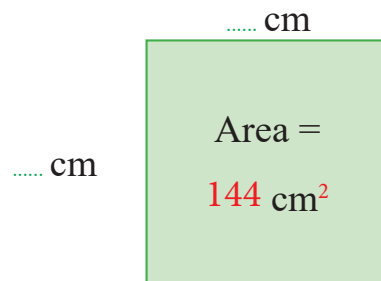
Side length of square  
= ..... mm

**Practice 7** **Tahany** wants to put a square frame around her father's picture. The picture she want to frame has an area of **144** square centimetres . What is the side length of the frame?

**Solution**

Side length of square = ..... cm

**Because** .....  $\times$  ..... = 144



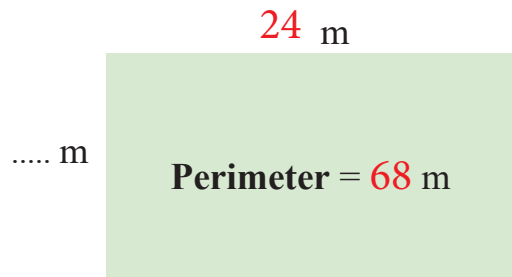
## Self - check on lesson ( 3 )

**1** Find the missing side :

**Solution**

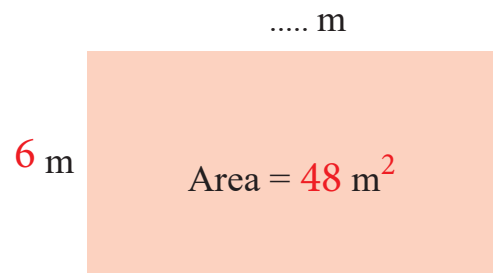
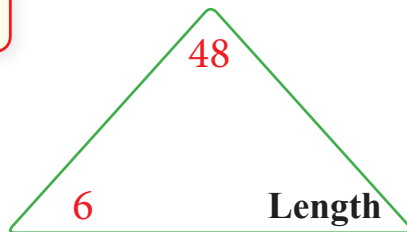
Half of perimeter = 34	
Width	24

So : Width = ..... - .....  
= ..... m



**2** Find the missing side :

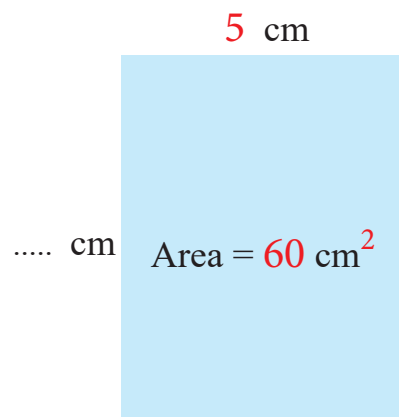
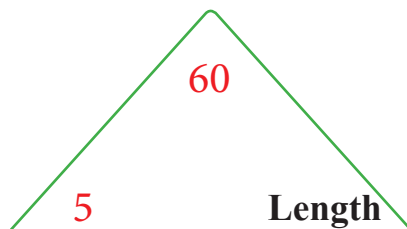
**Solution**



So : Length = ..... m

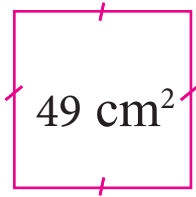
**3** Find the missing side :

**Solution**

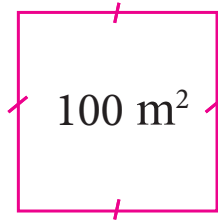


So : Length = ..... cm

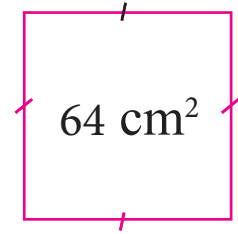
**4** Find the missing side :



Side length of square  
= ..... cm

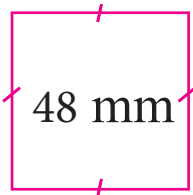


Side length of square  
= ..... m

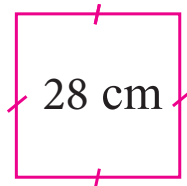


Side length of square  
= ..... cm

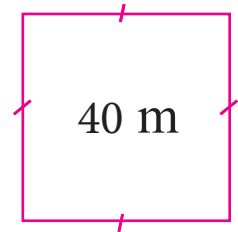
**5** Find the missing side :



Side length of square  
= ..... mm



Side length of square  
= ..... cm



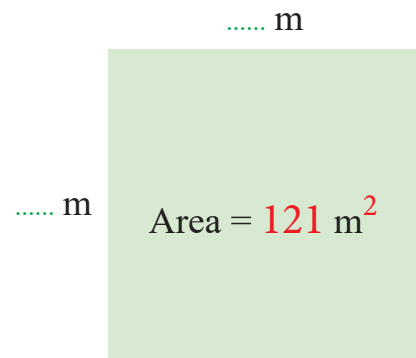
Side length of square  
= ..... m

**6** **Asmar** wants to put a square fence around the barn. The barn she wants to put the fence around is **121** square meters. What is the length of the side of the fence?

**Solution :**

Side length of square = ..... m

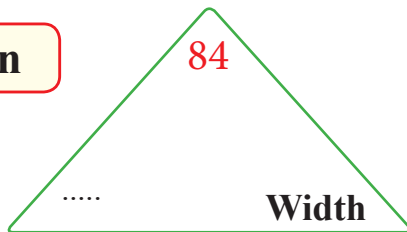
Because .....  $\times$  ..... = 121



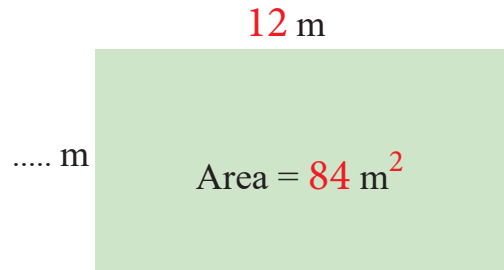
## Unit 4

- 7** **Mazen** wants to build a new goat barn **84** square meter, and one of it's sides is **12** meters. Determine the width in meters :

**Solution**



So : width = ..... m

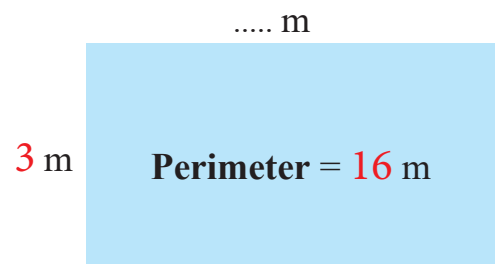


- 8** **Nahed** wants to put a tape around the edge of a blanket that is **3** meters wide and with perimeter **16** meters. What is the length of the blanket?

**Solution**

Half of perimeter = <b>8</b>	
Length	.....

So : length = ..... - ..... = ..... m

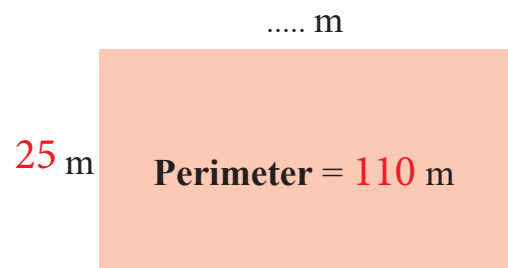


- 9** **Soliman** works in a farm. He wants to build a wire fence of length **110** m around the farm. The width of the fence **25** meters . What is the length of the missing side?

**Solution**

Half of perimeter = <b>55</b>	
Length	.....

So : Width = ..... - ..... = ..... m



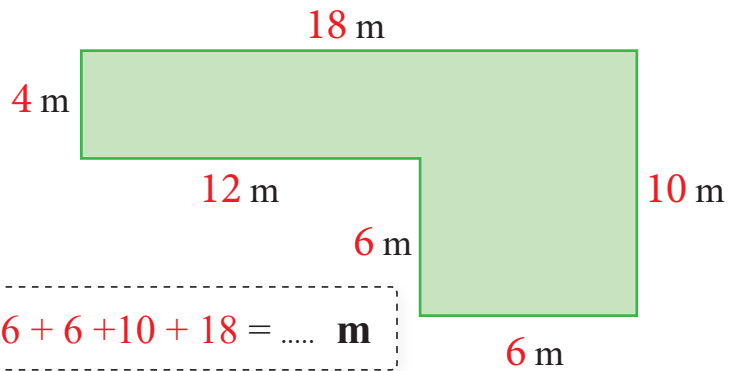
# Odd Shapes

Lesson

4

**Activity \*** Find the perimeter and area of the following figure :

**First : Perimeter**



**Solution**

Perimeter of figure =  $4 + 12 + 6 + 6 + 10 + 18 = \dots \text{ m}$

**Second : Area**

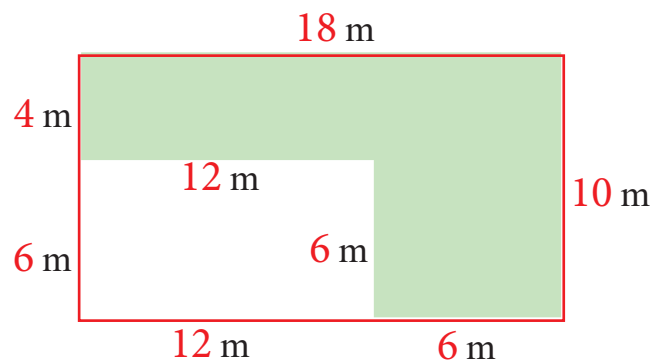
**Convert the shape to a large rectangle:**

Area of big shape =  $18 \times 10$

Area of small shape =  $12 \times 6$

Area of shaded part =

$\dots - \dots = \dots \text{ m}^2$



**Another way to solve**

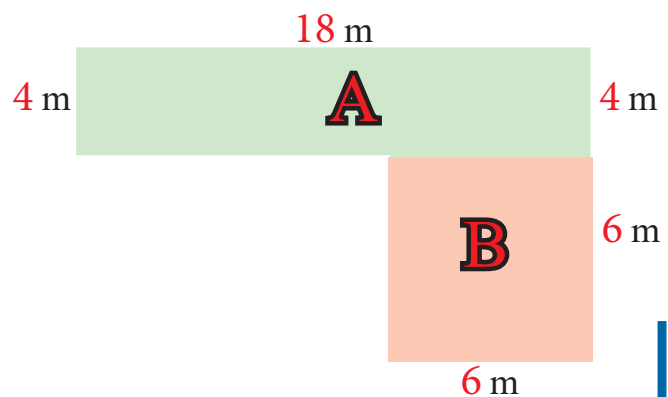
**It can be divided into two rectangles :**

Area of shape (A) =  $18 \times 4$

Area of shape (B) =  $6 \times 6$

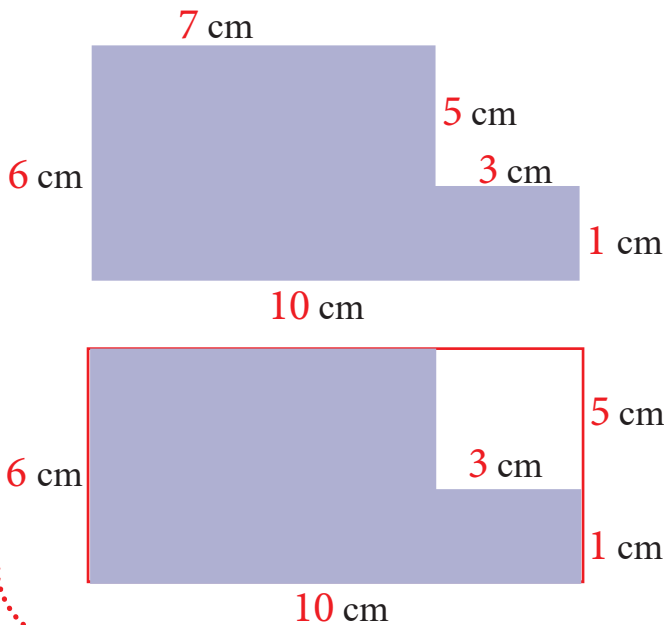
Area of shaded shape =

$\dots + \dots = \dots \text{ m}^2$



# Unit 4

**Practice 1** Find the perimeter and the area of the following figure :



Perimeter of figure =

$$1 + 3 + 5 + 7 + 6 + 10 = \dots \text{ cm}$$

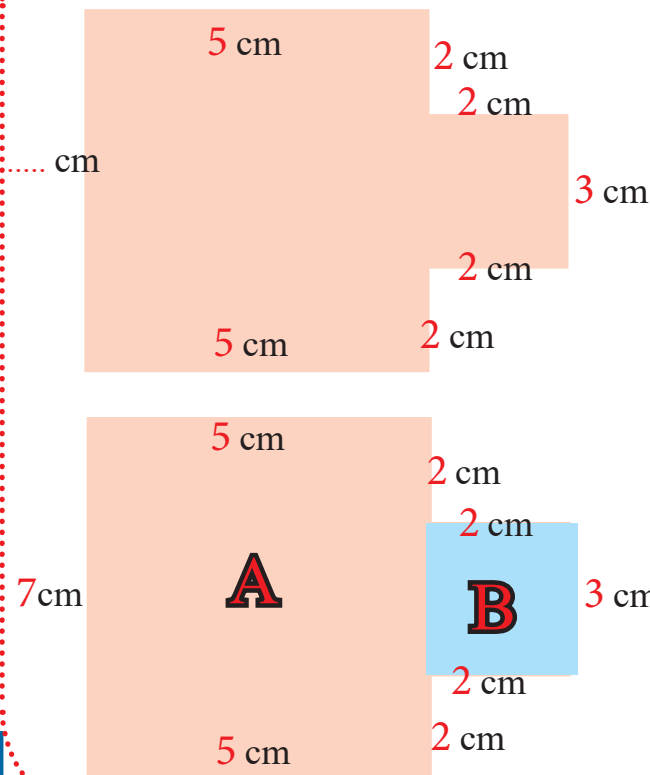
Area of big shape =  $\dots \times 6$

Area of small shape =  $\dots \times 3$

Area of the shape =

$$\dots - \dots = \dots \text{ cm}^2$$

**Practice 2** Find the perimeter and area of the following figure :



Perimeter of figure =

$$5 + 2 + 2 + 3 + 2 + 2 + 5 + \dots = \dots \text{ cm}$$

Area of shape (A) =  $\dots \times 5$

Area of shape (B) =  $\dots \times 2$

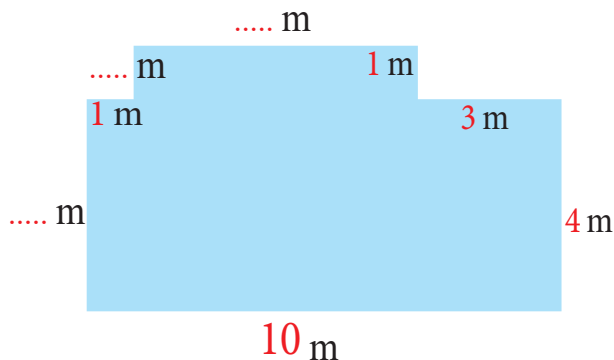
Area of the all shape =

$$\dots + \dots = \dots \text{ cm}^2$$



## Self - check on lesson ( 4 )

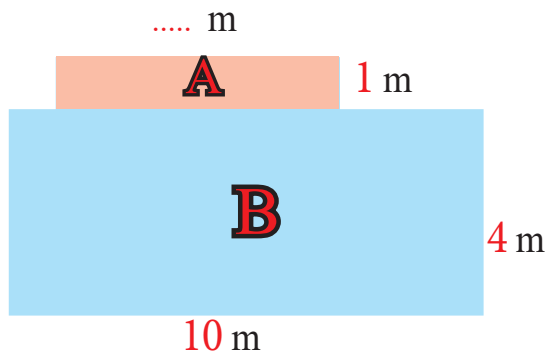
**1** Find the perimeter and area of the following figure :



Perimeter of figure =

$$10 + 4 + 3 + 1 + \dots + \dots + 1 + \dots$$

$$= \dots \text{ m}$$



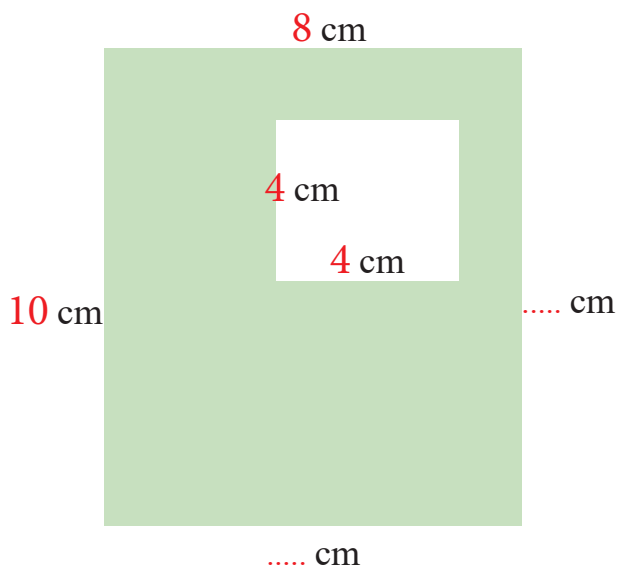
Area of shape (A) = .....  $\times$  4

Area of shape (B) = .....  $\times$  1

Area of shaded part =

$$\dots + \dots = \dots \text{ m}^2$$

**2** Find the perimeter and the area of the Colored figure :



Perimeter of rectangle =

$$10 + 8 + \dots + \dots = \dots \text{ cm}$$

Area of big shape = .....  $\times$  8

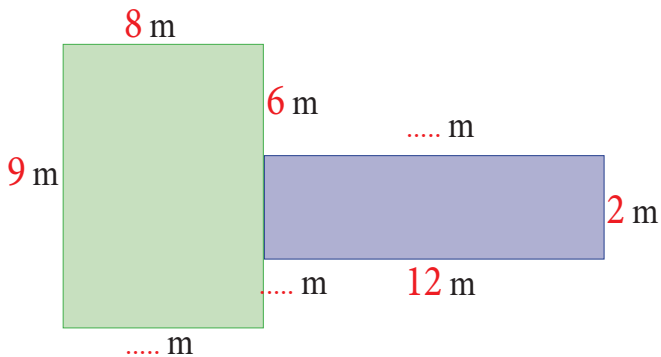
Area of small shape = .....  $\times$  4

Area of shaded part =

$$\dots - \dots = \dots \text{ cm}^2$$

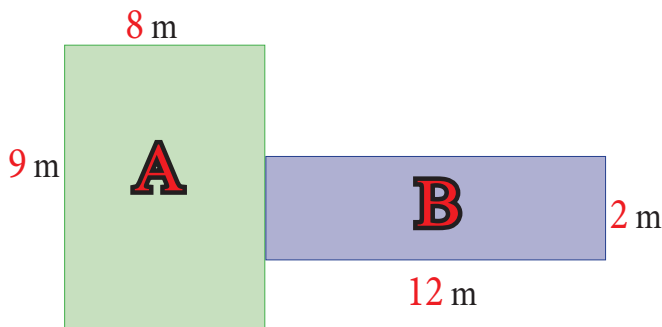
## Unit 4

**3) Find the perimeter and the area of the following figure :**



Perimeter of figure =

$$9 + 8 + 6 + \dots + 2 + 12 + \dots + \dots$$
$$= \dots \text{ m}$$



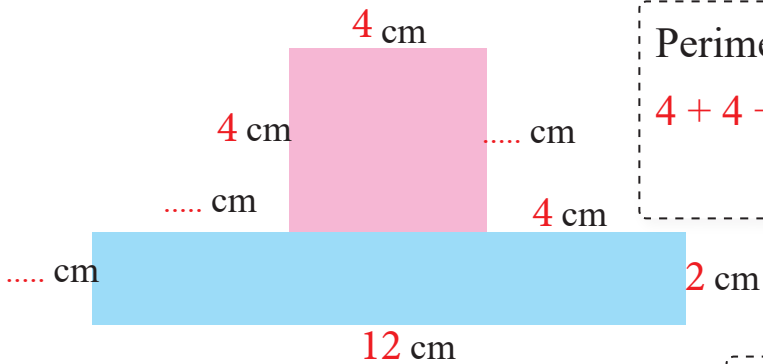
Area of shape (A) = ....  $\times 8$

Area of shape (B) = ...  $\times$  2

Area of the all shape =

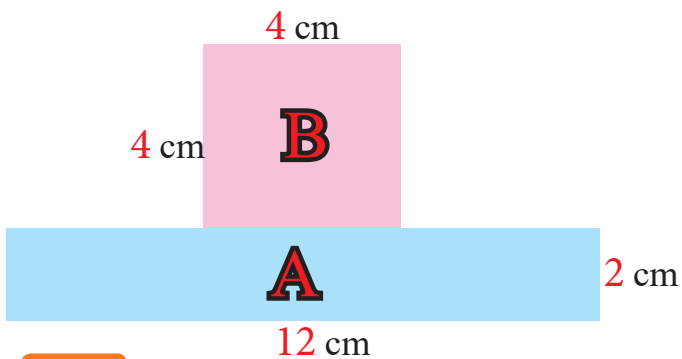
$$\dots + \dots = \dots \text{ m}^2$$

**4** Find the perimeter and the area of the following figure :



Perimeter of figure =

$$4 + 4 + \dots + \dots + 12 + 2 + 4 + \dots$$
$$= \dots \text{ cm}$$



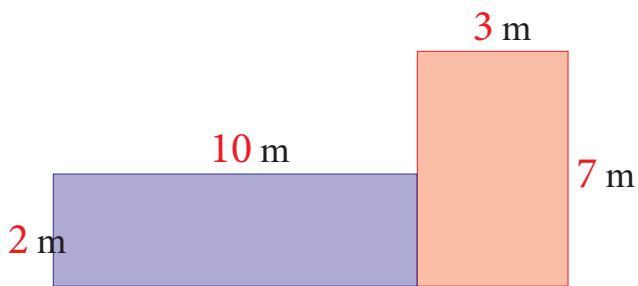
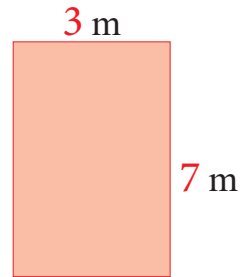
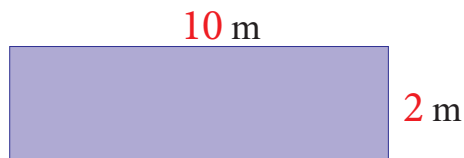
Area of shape (A) = .....  $\times 12$

Area of shape (B) = ....  $\times 4$

Area of the all shape =

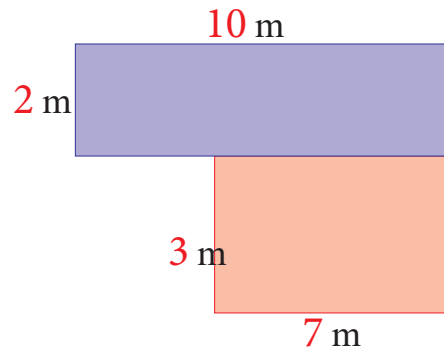
$$\text{.....} + \text{.....} = \text{..... cm}^2$$

- 5** Join these two simple shapes to form one compound shape in different ways, then find its area and its perimeter, and what do you notice?



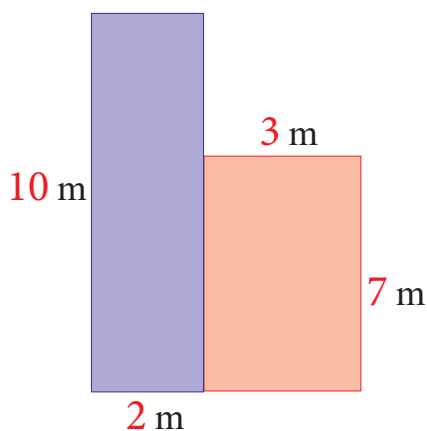
Area of figure = .....  $\text{m}^2$

Perimeter of figure = ..... **m**



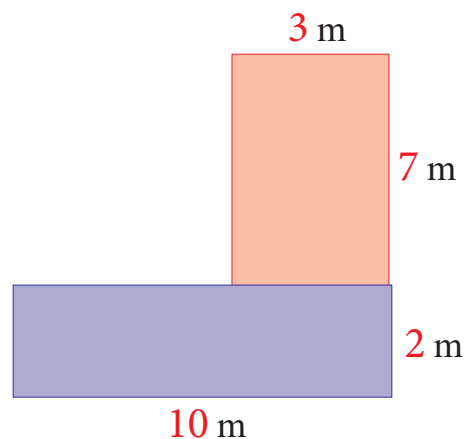
Area of figure = .....  $\text{m}^2$

Perimeter of figure = ..... **m**



Area of figure = .....  $\text{m}^2$

Perimeter of figure = ..... **m**



Area of figure = .....  $\text{m}^2$

Perimeter of figure = ..... **m**

## Growing Dimensions

### Lesson

### 5

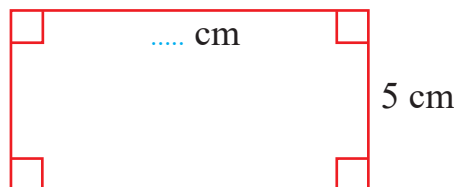
#### Activity 1 Complete as in (a) :

- (a) Six times the number (10) =  $6 \times 10 = 60$
- (b) Three times the number (7) =  $3 \times \dots = \dots$
- (c) Five times the number (12) =  $5 \times \dots = \dots$
- (d) Double the number (100) =  $2 \times \dots = \dots$
- (e) Four times a million =  $4 \times \dots = \dots$

#### Activity 2 Complete as in (a) :

- (a) The number 15 is 3 times the number .....
- (b) The number 18 is 3 times the number .....
- (c) The number 100 is ten times the number .....
- (d) The number 30 is five times the number .....
- (e) The number 24 is 6 times the number .....

#### Activity 3 If width = 5 cm, find the length in each of the following cases:



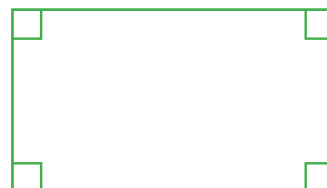
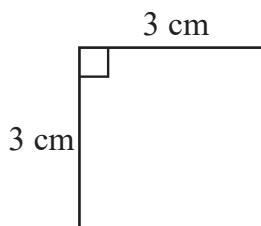
- (a) The length was double the width  $\Rightarrow$  length =  $2 \times \dots = \dots$  cm
- (b) The length was 3 times of width  $\Rightarrow$  length =  $\dots \times \dots = \dots$  cm
- (c) The length was 4 times of width  $\Rightarrow$  length =  $\dots \times \dots = \dots$  cm

**Practice 1** From the following table, express the comparison using multiplication as in (a, b) :

Ant type	Length
Ghost ants	1 mm
Pharaonic ants	2 mm
Argentine ants	3 mm
Fire ants	6 mm
Sugar ants	15 mm

- (a) The length of the pharaonic ants = 2 times Ghost ant because  $2 \times 1 = 2$
- (b) The length of fire ants = 3 times Pharaonic ants because  $3 \times 2 = 6$
- (c) The length of Argentine ants = .....  $\times$  Ghost ant because .....  $\times 1 = 3$
- (d) The length of Fire ants = .....  $\times$  Ghost ant because .....  $\times 1 = 6$
- (e) The length of Sugar ants = .....  $\times$  Ghost ant because .....  $\times 1 = 15$
- (f) The length of Sugar ants = .....  $\times$  Argentine ants because .....  $\times 3 = 15$

**Practice 2** Notice the two figures, then complete :



- (a) If the perimeter of the rectangle = double the perimeter of the square.  
So : Perimeter of the rectangle =  $2 \times \text{.....} = \text{.....}$  cm.
- (b) If the area of the rectangle = double the area of the square.  
So : Area of the rectangle =  $2 \times \text{.....} = \text{.....}$  cm<sup>2</sup>.

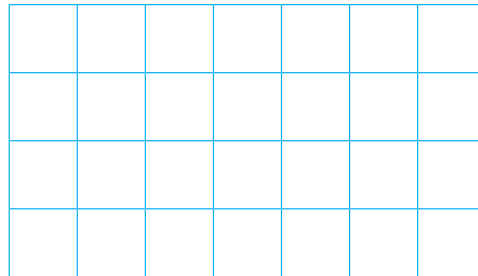
## Unit 4

### Practice 3

Draw a rectangle with a width of 1 unit and a length 3 times its width :

Width = 1 length unit

Length = .....  $\times$  1 = ..... length unit



### Practice 4

A rectangle has a width of 5 cm and a length 4 times its width, find its area and its perimeter :

Width = 5 cm

Length = .....  $\times$  5 = ..... cm

..... cm

5 cm



Area = .....  $\times$  ..... = .....  $\text{cm}^2$

Perimeter = ( ..... + ..... )  $\times$  2 = .... cm

### Practice 5

Adam's rectangular Garden has an area of 20 square metres. The longest side of the garden is 5 meters. If the length and the width of Dalia's garden is three times length and width of Adam's rectangular garden.

What is the perimeter of Dalia's garden?

The length of Dalia's garden = .....  $\times$  The length of Adam's garden  
= .....  $\times$  5 = ..... m

The width of Dalia's garden = .....  $\times$  The width of Adam's garden  
= .....  $\times$  3 = ..... m

The perimeter of Dalia's garden = ( ..... + ..... )  $\times$  2 = ..... m

**Practice 6** Calculate the perimeter of a rectangle with a length of 10 cm and a width equal half its length.

Width = half the length of the rectangle = 5 cm

Perimeter = ( ..... + ..... )  $\times$  2 = ..... cm

10 cm  
..... cm

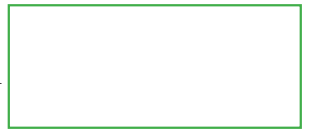


**Practice 7** Balcony in the form of a rectangle its width equal 300 cm, the length is double its wide. Calculate the length of the balcony.

Length of the balcony = .....  $\times$  width

= .....  $\times$  ..... = ..... cm

..... cm  
300 cm



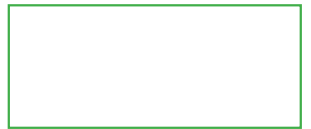
**Practice 8** A rectangular shape with a width of 4 meters and a length equal to 3 times its width. What is the perimeter of the rectangle?

Length of rectangle = .....  $\times$  width

= .....  $\times$  ..... = ..... m

The perimeter = ( ..... + ..... )  $\times$  2 = ..... m

..... m  
4 m

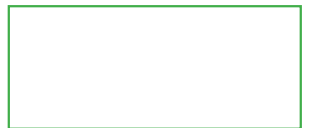


**Practice 9** Ahmed painted a mural with a length of 6 meters and a width of 3 meters, he want to draw another mural has width equal the length of the first and length 4 times the width of the first mural . What is the perimeter of the second mural ?

Length of second mural = 4.  $\times$  length of first

= .....  $\times$  ..... = ..... m

..... m  
6 m



Perimeter of second mural = ( ..... + 6 )  $\times$  2 = ..... m

## Self - check on lesson ( 5 )

- 1** Find the area of a rectangle with a width of **3** units and a length double it's width .

$$\begin{aligned} \text{length} &= \dots \times \text{width} \\ &= \dots \times \dots = \dots \text{ unit} \end{aligned}$$

$$\text{Area} = \dots \times \dots = \dots \text{ square unit}$$

- 2** Calculate the perimeter of a rectangle with a width of **20** units and a length **4** times it's width.

$$\begin{aligned} \text{Length} &= \dots \times \text{width} \\ &= \dots \times \dots = \dots \text{ unit} \end{aligned}$$

$$\text{Perimeter} = ( \dots + \dots ) \times 2 = \dots \text{ unit}$$

- 3** A rectangular swimming pool with a width of **3** meters. If it's length is **3** times it's width. What is the area of the swimming pool?

$$\begin{aligned} \text{length} &= \dots \times \text{width} \\ &= \dots \times \dots = \dots \text{ m} \end{aligned}$$

$$\text{Area} = \dots \times \dots = \dots \text{ m}^2$$

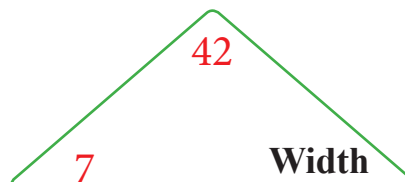
- 4** Two rectangles, the area of the first is **42** square centimetres and it's side length is **7** cm ,the width of the second is the same as the length of the first , but it's length is **3** times the width of the first. What is the area of the second rectangle?

Then : width of second = length of first = ..... cm

Width of first = ..... cm

$$\begin{aligned} \text{Length of second} &= \dots \times \text{width of first} \\ &= \dots \times \dots = \dots \text{ cm} \end{aligned}$$

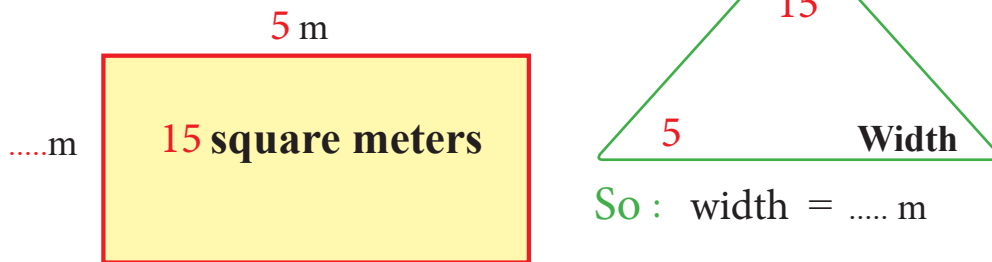
$$\text{Area of second} = \dots \times \dots = \dots \text{ cm}^2$$





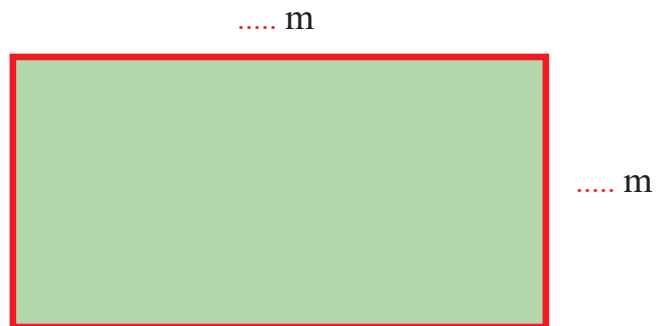
- 5** The area of the sand field next to Mohammed's house is **15** square meters. The length of the longest side is **5** meters. Draw this sandy field and find its perimeter. While the green field on the other side of the road is equal to twice the length and width of the sand field. Find the area and the perimeter of the green field.

Sand field



$$\text{Perimeter of sand field} = ( \dots + \dots ) \times 2 = \dots\text{ m}$$

Green field



$$\begin{aligned} \text{L of green} &= \dots \times \text{L of sand} \\ &= \dots \times 5 = \dots\text{ m} \end{aligned}$$

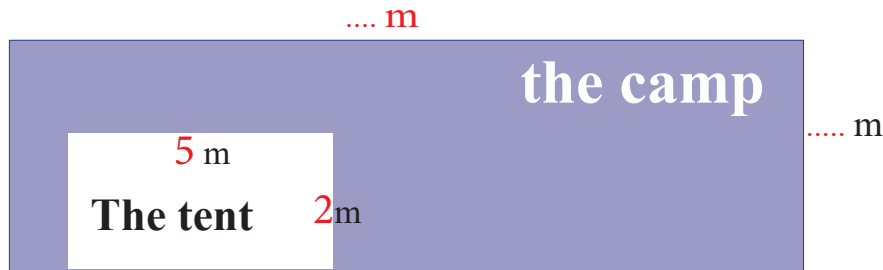
$$\begin{aligned} \text{W of green} &= \dots \times \text{W of sand} \\ &= \dots \times \dots = \dots\text{ m} \end{aligned}$$

$$\text{Area of green} = \dots \times \dots = \dots\text{ m}^2$$

$$\text{Perimeter of green} = ( \dots + \dots ) \times 2 = \dots\text{ m}$$

## Unit 4

- 6** The following diagram shows the camp for a tourist. If the length of the camp is six times the length of the tent, and the width of the camp was three times the width of the tent. What is the area of the rest of the camp?



$$\begin{aligned} \text{L of the camp} &= \dots \times \text{L of tent} \\ &= \dots \times 5 = \dots \text{ m} \end{aligned}$$

$$\begin{aligned} \text{W of the camp} &= \dots \times \text{W of tent} \\ &= \dots \times 2 = \dots \text{ m} \end{aligned}$$

$$\text{The area of camp} = \dots \times \dots = \dots \text{ m}^2$$

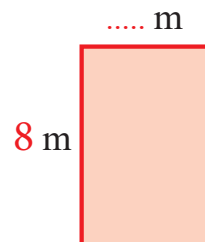
$$\text{The area of the tent} = \dots \times \dots = \dots \text{ m}^2$$

$$\text{The area of the rest of the camp} = \dots - \dots = \dots \text{ m}^2$$

- 7** A mural of 24 square meters with 8 meters long. What is the width of the mural? The width of another mural is the same length as the first, but it's length three times as long Show the first mural. What is the perimeter of the other mural?



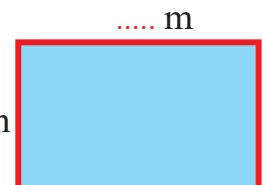
Then : width = ..... m



### The other painting

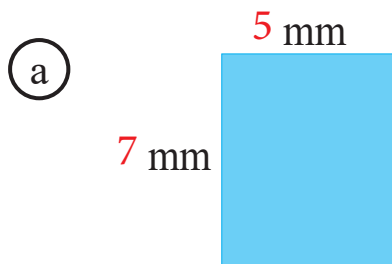
$$\begin{aligned} \text{The length of another mural} &= \dots \times \text{width of the first} \\ &= \dots \times \dots = \dots \text{ m} \end{aligned}$$

$$\text{The perimeter of another mural} = (\dots + \dots) \times 2 = \dots \text{ m}$$



## Self - check 1 Chapter 4

### 1 Convert to the suitable units :

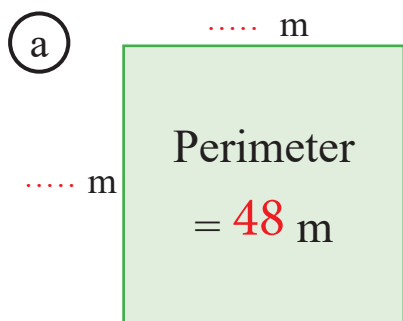


Area of rectangle = .....  $\text{mm}^2$

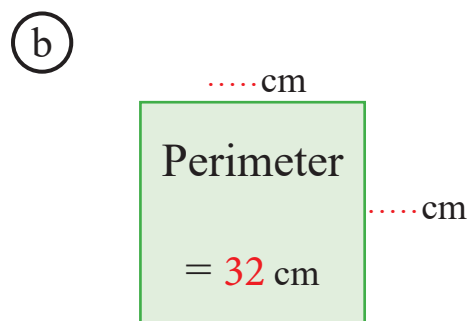


Area of rectangle = .....  $\text{m}^2$

### 2 Find the missing side of the square :



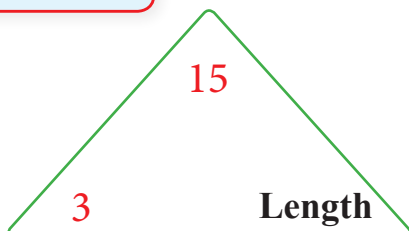
Length of square = ..... m



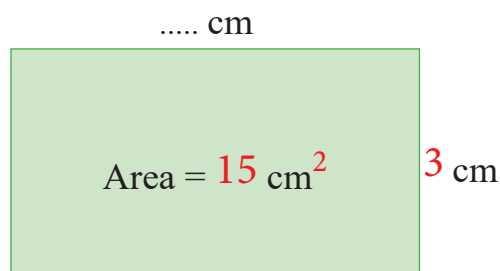
Length of square = ..... cm

### 3 Find the missing side of the figure :

**Solution**



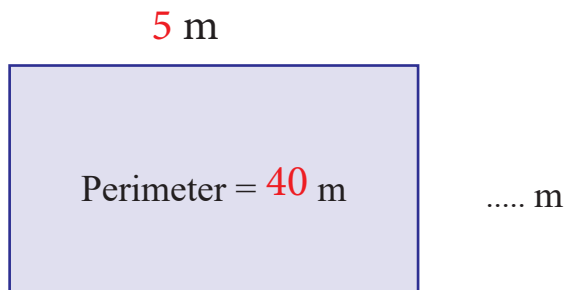
So : Length of fig = ..... cm



## Unit 4

**4** Find the missing side of the figure :

(a)

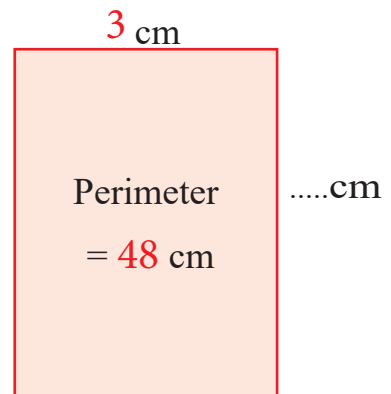


Half of perimeter = .....

Width	.....
-------	-------

So : width = .... m

(b)

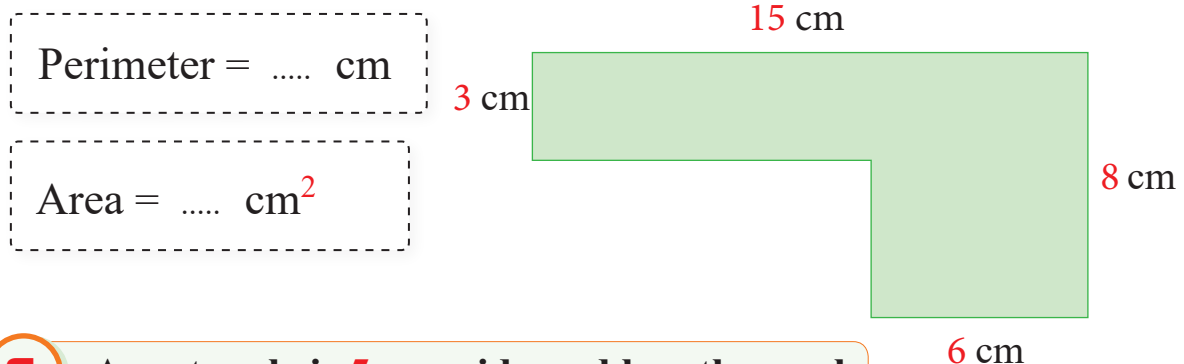


Half of perimeter = .....

Length	.....
--------	-------

So : length = .... cm

**5** Find the perimeter and the area of the following figure :



Perimeter = .... cm

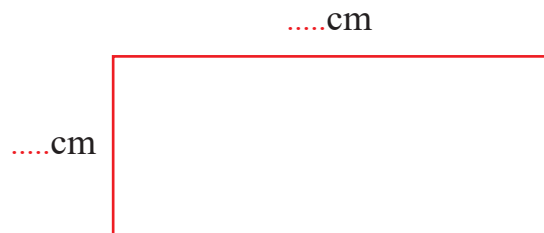
Area = .... cm<sup>2</sup>

**6** A rectangle is 5 cm wide and length equal 4 times it's width. Find it's area :

Width = .... cm

Length = .... × .... = .... cm

Area = .... cm<sup>2</sup>



## Self - check 2 Chapter 4

### 1 Complete :

- (a) Write two even numbers their sum is 10 : .....
- (b) The smallest 5-digit number is .....
- (c) The value of the number 9 in the number 1092175 is .....
- (d) The expanded form for the number 13204905 = .....
- (e) Half a milliard = .....
- (f) The smallest number formed by the digits 3,5,0,2,6 is .....
- (g) 950 000 = ..... thousands
- (h) 12 hundred thousands = .....

### 2 Find the result :

- (a) Estimate the number 6120957 through the place value . .....
- (b) Round to the nearest ten thousand the number 726903. ....
- (c) The number in hundred thousands less than 6320897 is .....
- (d) What is the number 1666666 more than one million? .....

### 3

A handball player goes 4 days in a week to train 3 hours a day. How many hours does he train in 6 weeks?

**Solution** : Number of training days =  $4 \times \dots = \dots$  days

The number of training hours =  $3 \times \dots = \dots$  hours

## Unit 4

**4** Write the equation and find the value of the variable :

(a)

15	
X	9

The equation : .....

Solution : .....

(b)

Y	
302	157

The equation : .....

Solution : .....

**5** Complete :

(a) 4 kg =  $4 \times$  ..... = ..... gm

(b) 5000 ml =  $5000 \div$  ..... = ..... L

(c) 7 m and 30 cm = ..... cm + ..... cm = ..... cm

(d)  $4 : 15 + 2 : 45 =$  ..... : .....

(e) 50 hours = ..... day and ..... hour

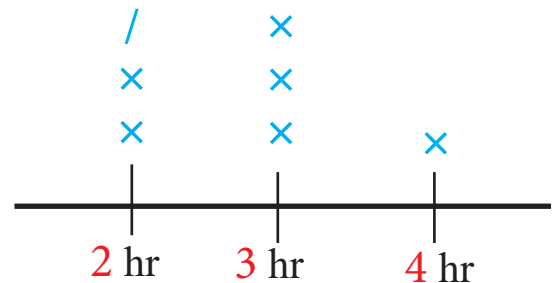
(f) 2435 gram = ..... kg and ..... gm

**6** Using the graph, answer the following :

Number of hours of study per day

key :  $\times = 6$  students

key :  $\backslash = 3$  students



How many students who study 3 hours? .....

How many students who study more than 2 hours? .....

For more exercises follow Self-check on Syllabus in the second part

# Multiplication as a relation

## Unit Five



Array	مصفوفة
Appliances	جهاز
Bar graph	تمثيل بياني
Beans	فول
Birthday	يوم ميلاد
Comparison	مقارنة
Commutative	ابدال
Consumes	تستهلك
Cruise ship	سفينة سياحية
Convert	يحول
Compare	يقارن
Dormitory	عنبر
Exploring	ستكشف
Electrical	كهربائي
Equation	معادلة
Factorize	يحلل
Factor	عامل
Grains	فاصوليا
Greater than	أكبر من

Hinge	مفصلة
Identity	محاييد
Least	أقل
Mean	وسيلة
Mental	عقلي
Product	ناتج عملية الضرب
Parentheses	أقواس
Passenger	راكب
Quantity	كمية
Repetitions	تكرار
Sail boat	قارب شراعي
Subway car	سيارة مترو
Seat	مقعد ثابت
Shelve	رف
Skip Counting	العد بالتخطي
Subtraction	الطرح
Transportation	مواصلات
Worm	دودة

## Content

Exercise  
inspired from  
Math Journal

Exercise  
on lessons

Self-Check  
on the unit

# Comparison by using Multiplication

Lesson

1, 2, 3

## Activity \* You know what :

- Array :  $2 \times 3$
- Number of element = 6 apples
- The number 6 appeared as  
a result of having two rows and each row of 3.
- So : 6 is double 3.



- The number 6 is the result of the number 2 appearing three times  
So : 6 is 3 times 2.



## Practice 1 Compare then write the comparison sentence as in (a) :

(a)  $10, 2 \longrightarrow 10 = 5 \text{ times } 2.$

(b)  $12, 3 \longrightarrow 12 = \dots\dots\dots \text{ times } 3.$

(c)  $18, 6 \longrightarrow 18 = \dots\dots\dots \text{ times } 6.$

(d)  $15, 3 \longrightarrow 15 = \dots\dots\dots \text{ times } 3.$

(e)  $28, 7 \longrightarrow 28 = \dots\dots\dots \text{ times } 7.$

(f)  $27, 9 \longrightarrow 27 = \dots\dots\dots \text{ times } 9.$

(g)  $20, 4 \longrightarrow 20 = \dots\dots\dots \text{ times } 4.$



**Practice 2** Note and then write the comparison sentence as in (a) :

(a) 

6	6	6	6	6
---	---	---	---	---

 $30 = 5 \text{ times } 6$

(b) 

5	5	5	5
---	---	---	---

 ..... = ..... times 5

(c) 

8	8	8
---	---	---

 ..... = ..... times 8

(d) 

4	4	4	4
---	---	---	---

 ..... = ..... times 4

(e) 

7	7	7	7	7
---	---	---	---	---

 ..... = ..... times 7

(f) 

6	6	6	6	6	6
---	---	---	---	---	---

 ..... = ..... times .....

**Practice 3** Circle the comparison sentence as in (a) :

(a) The sailboat moves almost fast **equal to twice the speed** of a person walking.

(b) The bike is moving at a speed of approximately 3 to 4 times the speed of sailing boat.

(c) The cruise ship is moving as fast as a fast bike about 8 times the speed of the cruise ship.

(d) A car moves at 20 times the speed of a person walking and twice the speed of a cruise ship.

## Unit 5

**Practice 4** Write an equation to express the comparison sentence, as in (a) :

- (a) A number 4 times 3 :  $\longrightarrow X = 4 \times 3$   
 We write the equation and put in place of the unknown any symbol , let it be  $x$
- (b) 18 equals 6 times that number :  $\longrightarrow \dots = \dots \times \dots$
- (c) A number equal to twice the number 7 :  $\longrightarrow \dots = \dots \times \dots$
- (d) 24 is 4 times that number :  $\longrightarrow \dots = \dots \times \dots$
- (e) 25 is 5 times that number :  $\longrightarrow \dots = \dots \times \dots$

**Practice 5** Nadia collected 5 glass balls in March, and kept the balls collecting until May. then the number of balls with her became 4 times that number.  
 How many glass balls does Nadia have in May?

**Solution :** Number of glass balls =  $X = 4 \times \dots = \dots$  ball

**Practice 6** Hamed had 12 cakes, which is 3 times the number of cakes with his brother Ahmed.  
 How many pieces of cake was Ahmed has?

**Solution :**  $3 \times X = 12 \longrightarrow X = \dots$  pieces

**Practice 7** Aida walked to school on Monday and arrived 21 minutes later. On Tuesday, she rode her bike to school and arrived seven minutes later.  
 How many times was riding a bike faster than walking?

**Solution :**  $X \times 7 = 21 \longrightarrow X = \dots$  times

Practice

8

Write an equation to express the comparison sentence, as in (a) :

Means of transportation	Number of seats
Bike	1
Motorcycle	2
Car	4
Truck	6
Bus	36
Subway car	48

- (a) How many times the number of seats in a truck equals the number of seats on a motorcycle?

Equation :  $X \times 2 = 6$   $\longrightarrow$  Solution :  $X = 3$

- (b) How many times is the number of seats in a subway car equal to the number of seats in the car?

Equation :  $X \times \dots = 36$   $\longrightarrow$  Solution :  $X = \dots$

- (c) How many times is the number of seats in a subway car equal to the number of seats in the car?

Equation :  $X \times \dots = 48$   $\longrightarrow$  Solution :  $X = \dots$

- (d) How many times is the number of seats in a bus equal to the number of seats in the car?

Equation :  $X \times \dots = \dots$   $\longrightarrow$  Solution :  $X = \dots$

## Unit 5

### Practice 9

Write an equation for each of the following comparisons, then solve it :

- (a) What number equals 5 times 6 ?

Equation :  $5 \times 6 = X$        $\longrightarrow$  Solution :  $X = \dots\dots\dots$

- (b) 36 is 4 times a number. What is this number?

Equation :  $\dots\dots \times X = 36$        $\longrightarrow$  Solution :  $X = \dots\dots\dots$

- (c) What number is 10 times 10 ?

Equation :  $X = 10 \times \dots\dots$        $\longrightarrow$  Solution :  $X = \dots\dots\dots$

- (d) Ayman ate 4 figs in the morning. his brother ate 3 times this number . How many figs did his brother eat?

Equation :  $X = \dots\dots \times \dots\dots$        $\longrightarrow$  Solution :  $X = \dots\dots\dots$

- (e) Ahmed has 10 pens and his friend has 5 times that number. How many pens with his friend?

Equation :  $X = \dots\dots \times \dots\dots$        $\longrightarrow$  Solution :  $X = \dots\dots\dots$

- (f) Kenzy has 7 balloons and his sister has 4 times that number. How many balloons with his sister?

Equation :  $X = \dots\dots \times \dots\dots$        $\longrightarrow$  Solution :  $X = \dots\dots\dots$

## Self-check on lesson (1, 2)

**1** Rewrite each equation using multiplication as in (a) :

(a)  $18 = 6 + 6 + 6 \longrightarrow 3 \times 6 = 18.$

(b)  $14 = 2 + 2 + 2 + 2 + 2 + 2 + 2 \longrightarrow \dots \times \dots = \dots.$

(c)  $12 = 4 + 4 + 4 \longrightarrow \dots \times \dots = \dots.$

(d)  $8 = 2 + 2 + 2 + 2 \longrightarrow \dots \times \dots = \dots.$

(e)  $25 = 5 + 5 + 5 + 5 + 5 \longrightarrow \dots \times \dots = \dots.$

(f)  $36 = 9 + 9 + 9 + 9 \longrightarrow \dots \times \dots = \dots.$

**2** Compare and then write the comparison sentence as in (a) :

(a)  $12, 3 \longrightarrow 12 = \dots \text{ times } 3.$  3   3   3   3

(b)  $30, 6 \longrightarrow 30 = \dots \text{ times } 6.$  6   6   6   6   6

(c)  $15, 5 \longrightarrow 15 = \dots \text{ times } 5.$  5   5   5

(d)  $28, 7 \longrightarrow 28 = \dots \text{ times } 7.$  7   7   7   7

(e)  $24, 8 \longrightarrow 24 = \dots \text{ times } 8.$  8   8   8

(f)  $16, 4 \longrightarrow 16 = \dots \text{ times } 4.$  4   4   4   4

## Unit 5

**3** Complete the bar chart and the comparison sentence as in(a):

(a) $30 = 6$ times 5	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td></tr></table>	5	5	5	5	5	5
5	5	5	5	5	5		
(b) $12 = \dots\dots\dots$ times 3	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						
(c) $18 = \dots\dots\dots$ times 9	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						
(d) $25 = \dots\dots\dots$ times 5	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						
(e) $21 = \dots\dots\dots$ times 7	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						
(f) $16 = \dots\dots\dots$ times 8	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						

**4** Circle the comparison sentence :

- (a) Passenger planes move at a speed about 200 times faster person going on his feet and double the speed of the high speed train.
- (b) The car is moving at a speed equal to 8 times the speed of cruise ship and more 30 times the speed sailing boat.

**5** Rewrite each equation using multiplication :

- (a) 21 is 7 times that number :  $\implies \dots \times \dots = \dots$
- (b) A number equal to twice the number 9 :  $\implies \dots \times \dots = \dots$
- (c) 24 equals 3 times that number :  $\implies \dots \times \dots = \dots$
- (d) 30 equals 6 times that number :  $\implies \dots \times \dots = \dots$

- 6** Mena ran around the football field 4 times.  
Aya ran around the football field twice as Mena.  
How many times did Aya run around the football field?

**Solution :** the number =  $X = 2 \times 4 = \dots\dots\dots$  times

- 7** Rana has 6 mangoes, and her brother Sherif has 18 mangoes.  
How many times is the number of mangoes with Sharif as the same as the number of mangoes with Rana?

**Solution :**  $X \times 6 = 18 \implies X = \dots\dots\dots$  times

- 8** Write an equation for comparisons.

Use a symbol to represent the unknown number :

- (a) 35 equals 7 times the number :  $\dots\dots\dots$
- (b) 48 equals 6 times the number :  $\dots\dots\dots$
- (c) 27 is 9 times the number :  $\dots\dots\dots$
- (d) 16 equals 4 times the number :  $\dots\dots\dots$
- (e) 40 equals 5 times the number :  $\dots\dots\dots$

- 9** The length of the car is 5 meters, and the length of the bus is 15 meters. How many times the length of the bus is the length of the car?

**Solution :** bus length =  $\dots\dots\dots$  car length because  $\dots\dots \times \dots\dots = \dots\dots$

## Unit 5

### 10 Note writing the numbers :

Means of transportation	Number of seats
Bike	1
Motorcycle	2
Car	4
Truck	6
Bus	36
Subway car	48

- a) How many times is the number of seats in a subway car equal to the number of seats in a truck?

Equation : .....

Solution : .....

- b) How many times is the number of seats in the bus equal to the number of seats in the car?

Equation : .....

Solution : .....

- c) How many times is the number of seats in a car equal to the number of seats in a motorcycle?

Equation : .....

Solution : .....

- d) How many times does the number of seats in a truck equal the number of seats in a bicycle?

Equation : .....

Solution : .....

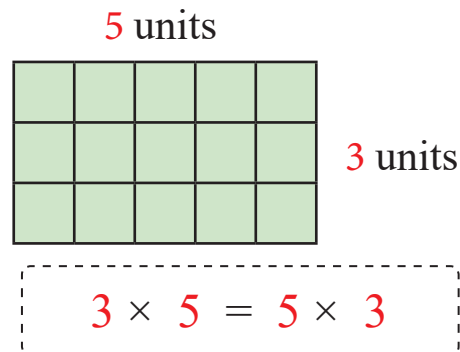
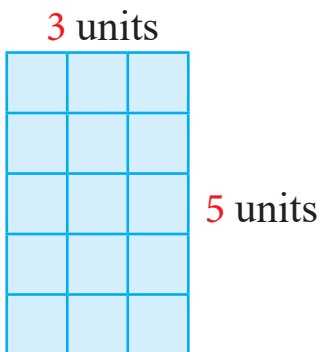


# Commutative Property of Multiplication

Lesson

4

**Activity 1** Note the equation of each array and note the substitution process.



**Activity 2** Using the commutative property of multiplication to describe two methods in which 8 ants are arranged :

Array :  $4 \times 2$



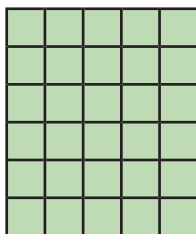
Array :  $2 \times 4$



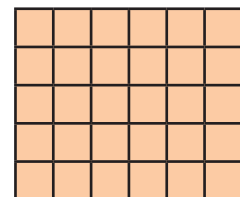
$$2 \times 4 = 4 \times 2$$

**Activity 3** Using the commutative property of multiplication to describe two methods that arrange 30 squares :

Array : .....  $\times$  .....



Array : .....  $\times$  .....



$$\text{.....} \times \text{.....} = \text{.....} \times \text{.....}$$

## Unit 5

**Practice 1** Use the commutative property of multiplication to complete each equation :

(a)  $5 \times \dots = 7 \times 5$

(b)  $7 \times 12 = \dots \times 7$

(c)  $20 \times 6 = \dots \times 20$

(d)  $9 \times \dots = 1 \times 9$

(e)  $8 \times \dots = 10 \times 8$

(f)  $4 \times 10 = \dots \times 4$

**Practice 2** Use the commutative property of multiplication to find the unknown value, as in (a) :

(a)  $X \times 4 = 4 \times 3 \longrightarrow X = \underline{3}$  because  $\underline{3} \times 4 = 4 \times \underline{3}$

(b)  $8 \times 9 = 9 \times Y \longrightarrow Y = \dots$  because  $\dots$

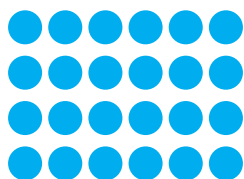
(c)  $X \times 11 = 11 \times 5 \longrightarrow X = \dots$  because  $\dots$

(d)  $Y \times 7 = 7 \times 2 \longrightarrow Y = \dots$  because  $\dots$

**Practice 3** Saleh has 24 grains of beans. Write an equation using the commutative property in multiplication to describe two ways he can arrange grains.

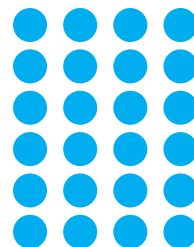
The first method

$24 = \dots \times 6$



The second method

$24 = 6 \times \dots$



So :  $\dots \times \dots = \dots \times \dots$

**Practice 4** Ahmed has 48 toy cars, write equations that describe the ways of arranging them with the use of the commutative property in the multiplication process.

**Solution :** draw 2 array as  $6 \times 8$  ,  $8 \times 6$  , what do you notice ?

## Self - check on lesson ( 4 )

**1** Use the commutative property of multiplication to complete each equation.

(a)  $9 \times 12 = \dots \times 9$

(b)  $2 \times \dots = 3 \times 2$

(c)  $10 \times 5 = \dots \times 10$

(d)  $6 \times \dots = 4 \times 6$

(e)  $7 \times 8 = \dots \times 7$

(f)  $3 \times \dots = 9 \times 3$

**2** Use the commutative property of multiplication to find the unknown value, as in (a) :

(a)  $X \times 7 = 7 \times 9 \longrightarrow X = \underline{9} \text{ because } \dots \times \dots = \dots \times \dots$

(b)  $8 \times 4 = 4 \times Y \longrightarrow Y = \dots \text{ because } \dots$

(c)  $X \times 10 = 10 \times 2 \longrightarrow X = \dots \text{ because } \dots$

(d)  $Y \times 7 = 7 \times 1 \longrightarrow Y = \dots \text{ because } \dots$

(d)  $5 \times 3 = 3 \times X \longrightarrow X = \dots \text{ because } \dots$

**3** The fruit seller arranges **36** mangoes every day in a different way to attract customers to buy them. Write equations that describe their arrangement.

Draw array :  $9 \times 4$

Draw array :  $4 \times 9$

Equation :  $\dots \times \dots = \dots \times \dots$

## Patterns of Multiplying by 10s - Exploring Patterns in Multiplication

Lesson

5, 6

**Activity 1** The property of the identity element in multiplication:

Using the array strategy :

Array :  $5 \times 1$

Number of it elements = 5

so  $5 \times 1 = 5$



Array :  $1 \times 5$

Number of it elements = 5

so  $1 \times 5 = 5$



So :  $5 \times 1 = 1 \times 5 = 5$

a number  $\times 1 = 1 \times$  same number = same number

**Practice 1** Use mental arithmetic to find the result :

(a)  $1 \times 12 =$  .....

(b)  $4 \times 1 =$  .....

(c)  $1 \times 7 =$  .....

(d)  $6 \times 1 =$  .....

(e)  $1 \times 9 =$  .....

(f)  $11 \times 1 =$  .....

**Activity 2** The property of the element (zero) in multiplication :

(a)  $5 \times 0 =$  zero

(b)  $0 \times 7 =$  zero .

(c)  $27 \times 0 =$  zero

(d)  $0 \times 3125 =$  zero .

Any number  $\times 0 = 0 \times$  same number = zero

**Practice 2** Use mental arithmetic to find the result :

(a)  $1 \times 145 =$  .....

(b)  $37 \times 0 =$  .....

(c)  $0 \times 8 =$  .....

(d)  $150 \times 1 =$  .....

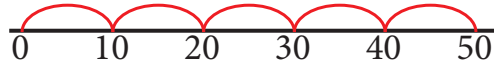
(e)  $0 \times 340 =$  .....

(f)  $1 \times 1502 =$  .....

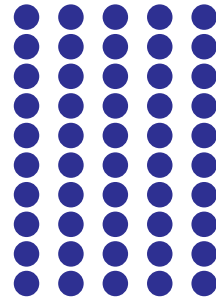
**Activity 3** If the metro is travelling at **10** times the speed of a person walking around. If a person is travelling at a speed of 5 km/hr. **What is the metro speed?**

**First strategy**  $10 \times 5 = 10 + 10 + 10 + 10 + 10 = 50$

**Second strategy** Skip count



**Third strategy** Array :  $10 \times 5$   
Number of element = 50



**Fourth strategy**  $10 \times 5 = 50$  ( put 0 and write the product of  $5 \times 1$  )

**Practice 3** Complete as in (a) :

(a)  $20 = \dots 2 \dots \times 10$

(b)  $50 = \dots \times 10$

(c)  $70 = \dots \times 10$

(d)  $30 = \dots \times 10$

(e)  $500 = \dots \times 10$

(f)  $160 = \dots \times 10$

**Practice 4** Complete as in (a) :

(a)  $500 = \dots 5 \dots \times 100$

(b)  $300 = \dots \times 100$

(c)  $700 = \dots \times 100$

(d)  $400 = \dots \times 100$

(e)  $7000 = \dots \times 100$

(f)  $1700 = \dots \times 100$

**Practice 5** Complete as in (a) :

(a)  $3000 = \dots 3 \dots \times 1000$

(b)  $4000 = \dots \times 1000$

(c)  $7000 = \dots \times 1000$

(d)  $8000 = \dots \times 1000$

(e)  $6000 = \dots \times 1000$

(f)  $13000 = \dots \times 1000$

# Unit 5

**Practice 6** Complete as in (a) :

- (a)  $3000 = 3 \times 1000 = 30 \times 100 = 300 \times 10$   
 (b)  $5000 = \dots \times 1000 = \dots \times 100 = \dots \times 10$   
 (c)  $8000 = \dots \times 1000 = \dots \times 100 = \dots \times 10$   
 (d)  $4000 = \dots \times 1000 = \dots \times 100 = \dots \times 10$   
 (e)  $2000 = \dots \times 1000 = \dots \times 100 = \dots \times 10$

**Activity 4** Find the result of  $700 \times 3$  using different strategies :

- (a) Repeat addition strategy :  $700 \times 3 = 700 + 700 + 700 = 2100$   
 (b) place value table :  $7 \times 3 = 21$  ones = 21 from   
 $70 \times 3 = 21$  tens = 21 from   
 $700 \times 3 = 21$  hundreds = 21 from   
 (c) Multiplication facts strategy :  $700 \times 3 = 2100$   
 ( multiple  $7 \times 3$  then put 00 )

**Practice 7** Complete as the example :

**Example :**  $70 \times 3 = 210$  ( find  $7 \times 3$  then put 0 )

- (a)  $80 \times 6 = \dots$  (b)  $90 \times 3 = \dots$   
 (c)  $50 \times 7 = \dots$  (d)  $40 \times 1 = \dots$

**Example :**  $700 \times 3 = 2100$  ( find  $7 \times 3$  then put 00 )

- (a)  $900 \times 7 = \dots$  (b)  $800 \times 4 = \dots$   
 (c)  $300 \times 6 = \dots$  (d)  $500 \times 1 = \dots$

**Practice 8** Complete as an **example** :

**Example :**  $7000 \times 3 = 21000$  ( multiply  $7 \times 3$  then put  $000$  )

(a)  $4000 \times 6 = \dots\dots\dots$

(b)  $3000 \times 9 = \dots\dots\dots$

(c)  $5000 \times 7 = \dots\dots\dots$

(d)  $8000 \times 4 = \dots\dots\dots$

(e)  $9000 \times 8 = \dots\dots\dots$

(f)  $6000 \times 8 = \dots\dots\dots$

**Practice 9** Complete as in ( a ) :

(a)  $20 \times \dots 7 \dots = 140$

(b)  $70 \times \dots\dots\dots = 350$

(c)  $30 \times \dots\dots\dots = 270$

(d)  $90 \times \dots\dots\dots = 360$

(e)  $40 \times \dots\dots\dots = 240$

(f)  $80 \times \dots\dots\dots = 480$

**Practice 10** Answer the following :

- (a) If the speed of a man is **5** km per hour and a plane is flying at a speed equal to **1000** times the speed of this man,  
What is the speed of the plane?

**Solution :** The speed of the plane = 1000 times the speed of a man  
= **1000**  $\times$  **5** =  $\dots\dots\dots$  km / hr

- (b) If it is known that the greatest single-digit number is **9**,  
What number is equal to **100** times of it?

**Solution :** The number = **100** times **9** = **100**  $\times$  **9** =  $\dots\dots\dots$

- (c) A square has a perimeter of **4** cm and another square whose perimeter is **10** times the perimeter of the first square.  
Find the side length of the second square.

**Solution :** Perimeter of second = **10**  $\times$  perimeter of first  
= **10**  $\times$  **4** =  $\dots\dots\dots$  cm

Side of the second =  $\dots\dots\dots \div \dots\dots\dots = \dots\dots\dots$  cm

## Self-check on lesson (5, 6)

**1** Use mental arithmetic to find the unknown value :

- (a)  $1 \times 5 = \dots\dots$       (b)  $1 \times 12 = \dots\dots$       (c)  $1 \times 672 = \dots\dots$   
(d)  $0 \times 8 = \dots\dots$       (e)  $0 \times 16 = \dots\dots$       (f)  $0 \times 758 = \dots\dots$

**2** Use mental arithmetic to find the unknown value :

- (a)  $\dots\dots \times 3 = 3000$       (b)  $6 \times \dots\dots = 60$   
(c)  $\dots\dots \times 7 = 70$       (d)  $\dots\dots \times 5 = 5000$   
(e)  $9 \times \dots\dots = 900$       (f)  $\dots\dots \times 2 = 200$

**3** Complete the following :

- (a)  $7000 = \dots\dots \times 1000 = \dots\dots \times 100 = \dots\dots \times 10$   
(b)  $2000 = \dots\dots \times 1000 = \dots\dots \times 100 = \dots\dots \times 10$   
(c)  $5000 = \dots\dots \times 1000 = \dots\dots \times 100 = \dots\dots \times 10$

**4** Use mental arithmetic to find the unknown value :

- (a)  $30 \times 8 = \dots\dots$       (b)  $9 \times 50 = \dots\dots$   
(c)  $200 \times 9 = \dots\dots$       (d)  $4 \times 600 = \dots\dots$   
(e)  $3000 \times 4 = \dots\dots$       (f)  $7 \times 2000 = \dots\dots$

**5** Use mental arithmetic to find the unknown value :

- (a)  $30 \times \dots\dots = 180$       (b)  $4000 \times \dots\dots = 8000$   
(c)  $500 \times \dots\dots = 1500$       (d)  $7000 \times \dots\dots = 35000$   
(e)  $700 \times \dots\dots = 2100$       (f)  $80 \times \dots\dots = 560$



**6** Answer the following :

- (a) Aya buys 7 kg of tomatoes from a vegetable merchant, so if the merchant has 1000 times what she bought. How many kilograms at the merchant?

**Solution :** the mass = .....  $\times$  ..... = ..... kg



- (b) If the length of an ant is 5 mm, and the length of a snake is 1000 times the length of this ant . Find the length of the snake in metres .

**Solution :** snake length = .....  $\times$  ..... = ..... mm = ..... m



- (c) It is known that the length of Pharaonic ants is 2 mm. The length of a worm is 100 times the length of this pharaonic ant. Find the length of the worm in cm?

**Solution :** worm length = .....  $\times$  ..... = ..... mm = ..... cm

- (d) If a bicycle has two seats, how many seats does a plane have if it is known that the number of seats is equal to 100 times the number of bicycle seats?

**Solution :** the number of seats = .....  $\times$  ..... = ..... seats



- (e) A family consumes 3 chickens in a week, and a factory consumes 1000 times what the family consumes. Find the number of what the factory consumes ?

**Solution :** the factory consumes = .....  $\times$  ..... = ..... chickens



- (f) If a cat has a mass of 4 kg, and a cow has a mass of 1000 times the mass of a cat. What is the mass of the cow?

**Solution :** the mass of the cow = .....  $\times$  ..... = ..... kg



# Exploring More Patterns in Multiplication.

## Lesson

## 7

### Activity \* Associative property :

We have three multiplication factors that are 5 , 2 , 4 and  
the required is :  $5 \times 2 \times 4$

- What is the two factors do you multiply first?
- or Should we start with the first two factors
- or can we choose any?

We will use parentheses to find the product as follows:

$$5 \times 2 \times 4 = (5 \times 2) \times 4 = 10 \times 4 = 40$$

or

$$5 \times 2 \times 4 = 5 \times (2 \times 4) = 5 \times 8 = 40$$

or

$$5 \times 2 \times 4 = (5 \times 4) \times 2 = 20 \times 2 = 40$$

Note the place of 2 , 4

Note :

Multiply what's in the parentheses first

### We conclude that :

When multiplying more than two numbers, we can multiply in any order and we get The product of the multiplication itself, and this property is called (**the associative property of multiplication**)

### Practice 1 Complete the following :

(a)  $2 \times 3 \times 6 = (\dots \times \dots) \times 6 = \dots \times 6 = \dots$

or

$$= 3 \times (\dots \times \dots) = 3 \times \dots = \dots$$

or

$$= 2 \times (\dots \times \dots) = 2 \times \dots = \dots$$

(b)  $5 \times 7 \times 10 = (\dots \times \dots) \times 10 = \dots \times 10 = \dots$

or

$$= 5 \times (\dots \times \dots) = 5 \times \dots = \dots$$

or

$$= 7 \times (\dots \times \dots) = 7 \times \dots = \dots$$

### Note

We use parentheses to show which factors we multiply first.

**Practice 2** Colour of the value equal to the value of the problem as in (a):

(a)	$(7 \times 3) \times 1$	$21 \times 1$	$10 \times 1$	11
(b)	$4 \times (10 \times 3)$	$4 \times 13$	$4 \times 30$	$14 \times 3$
(c)	$(9 \times 2) \times 5$	$9 \times (2 \times 5)$	$11 \times 5$	$9 \times 7$
(d)	$(2 \times 6) \times 3$	$8 \times 3$	$(2 \times 6) \times (2 \times 3)$	$12 \times 3$
(e)	$(4 \times 2) \times 8$	$8 \times (2 \times 10)$	$8 \times (2 \times 4)$	$6 \times 8$
(f)	$3 \times (5 \times 2)$	$3 \times 7$	$8 \times 2$	$3 \times 10$

**Practice 3** Complete the following as in (a) :

- (a)  $5 \times 4 \times 6 = ( \underline{5} \times 4 ) \times 6 = \underline{20} \times 6 = \underline{120}$
- (b)  $2 \times 3 \times 7 = ( \dots \times \dots ) \times 7 = \dots \times 7 = \dots$
- (c)  $3 \times 4 \times 3 = ( \dots \times \dots ) \times 3 = \dots \times 3 = \dots$
- (d)  $2 \times 6 \times 5 = 2 \times ( \dots \times \dots ) = 2 \times \dots = \dots$
- (e)  $8 \times 1 \times 9 = 8 \times ( \dots \times \dots ) = 8 \times \dots = \dots$

## Note

We multiply  
What's in  
the parentheses  
first.

**Practice 4** Complete the following as in (a) :

- (a)  $10 \times 2 \times 3 = 10 \times ( \underline{2} \times \underline{3} ) = 10 \times \underline{6} = \underline{60}$
- (b)  $10 \times 4 \times 1 = 10 \times ( \dots \times \dots ) = 10 \times \dots = \dots$
- (c)  $3 \times 3 \times 10 = ( \dots \times \dots ) \times 10 = \dots \times 10 = \dots$
- (d)  $4 \times 2 \times 10 = ( \dots \times \dots ) \times 10 = \dots \times 10 = \dots$
- (e)  $10 \times 2 \times 2 = 10 \times ( \dots \times \dots ) = \dots \times \dots = 40$

## Unit 5

### Practice 5 Answer the following :

- (a) Calculate how many pounds does Raouf pay to buy 5 boxes of pens, if each box has 10 pens ,where the price of one pen is 3 pounds.



**Solution :** What Raouf pay =  $\dots \times \dots \times \dots = (\dots \times \dots) \times \dots$   
 $= \dots \times \dots = \dots$  pounds

- (b) Ahmed saves 10 pounds per day from his work .  
 How many pounds does Ahmed save in 5 weeks?

**Solution :** Ahmed save =  $\dots \times \dots \times \dots = (\dots \times \dots) \times \dots$   
 $= \dots \times \dots = \dots$  pounds

- (c) A factory produces 10 electrical appliances per hour .  
 How many a devices does it produce in one day?

**Solution :** Number of a devices =  $\dots \times 1 \times \dots = (\dots \times \dots) \times \dots$   
 $= \dots \times \dots = \dots$  a devices

- (d) 10 boxes of fruit, each box contains 5 bags, each bag is 6 kg of fruit . How many kilograms in these boxes?

**Solution :** Number of kg =  $\dots \times \dots \times \dots = (\dots \times \dots) \times \dots$   
 $= \dots \times \dots = \dots$  kg

- (e) Hana bought 3 boxes. There are 7 bags in each box and 100 balloons in each bag. How many balloons?



**Solution :** Number of balloons =  $\dots \times \dots \times \dots = (\dots \times \dots) \times \dots$   
 $= \dots \times \dots = \dots$  balloons

## Self-check on lesson (7)

### 1 Complete the following :

(a)  $3 \times 1 \times 8 = ( \dots \times 1 ) \times 8 = \dots \times 8 = \dots$

(b)  $2 \times 2 \times 9 = ( \dots \times \dots ) \times 9 = \dots \times 9 = \dots$

(c)  $1 \times 7 \times 5 = ( \dots \times \dots ) \times 5 = \dots \times 5 = \dots$

(d)  $6 \times 2 \times 4 = 6 \times ( \dots \times \dots ) = 6 \times \dots = \dots$

(e)  $5 \times 3 \times 4 = 5 \times ( \dots \times \dots ) = 5 \times \dots = \dots$

(f)  $6 \times 3 \times 2 = 6 \times ( \dots \times \dots ) = 6 \times \dots = \dots$

### 2 Complete the following :

(a)  $2 \times 8 \times 100 = ( \dots \times \dots ) \times 100 = \dots \times 100 = \dots$

(b)  $3 \times 6 \times 100 = ( \dots \times 6 ) \times \dots = 18 \times \dots = \dots$

(c)  $100 \times 5 \times 4 = 100 \times ( \dots \times \dots ) = \dots \times 20 = \dots$

(d)  $2 \times 4 \times 100 = ( 2 \times 4 ) \times 100 = \dots \times \dots = \dots$

(e)  $100 \times 3 \times 9 = 100 \times ( \dots \times \dots ) = 100 \times \dots = \dots$

(f)  $100 \times 4 \times 6 = 100 \times ( \dots \times \dots ) = \dots \times \dots = 2400$

### 3 Complete the following :

(a)  $1000 \times 4 \times 3 = 1000 \times ( \dots \times \dots ) = 1000 \times \dots = \dots$

(b)  $1000 \times 5 \times 7 = 1000 \times ( \dots \times \dots ) = 1000 \times \dots = \dots$

(c)  $3 \times 9 \times 1000 = ( \dots \times \dots ) \times 1000 = \dots \times 1000 = \dots$

(d)  $4 \times 6 \times 1000 = ( \dots \times \dots ) \times 1000 = \dots \times 1000 = \dots$

(e)  $1000 \times 8 \times 5 = 1000 \times ( \dots \times \dots ) = \dots \times \dots = \dots$

## Unit 5

### 4 Answer the following :

- (a) A store has 10 shelves, each shelf has 9 boxes of cheese, and each box has 8 piece. How many pieces are on these shelves ?

**Solution :** Number of pieces =  $\dots \times \dots \times \dots = (\dots \times \dots) \times \dots$   
 $= \dots \times \dots = \dots$  pieces

- (b) A train consisting of 10 cars, each car has 12 seats, and two passengers sit on each seat. How many passengers can sit?

**Solution :** Number of passengers =  $\dots \times \dots \times \dots = (\dots \times \dots) \times \dots$   
 $= \dots \times \dots = \dots$  passengers

- (c) A hotel with 100 rooms, and each room has two doors, and each door has 3 hinges. How many hinges for all rooms?

**Solution :** Number of hinges =  $\dots \times \dots \times \dots = (\dots \times \dots) \times \dots$   
 $= \dots \times \dots = \dots$  hinges

- (d) There are 10 dormitory, and each dormitory has 9 chickens. How many chicken legs?

**Solution :** Number of legs =  $\dots \times \dots \times \dots = (\dots \times \dots) \times \dots$   
 $= \dots \times \dots = \dots$  legs

- (e) If one hand has 5 fingers.  
How many fingers for a thousand hands?



**Solution :** Number of fingers =  $\dots \times \dots \times \dots = (\dots \times \dots) \times \dots$   
 $= \dots \times \dots = \dots$  fingers

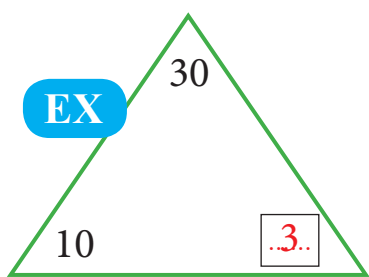
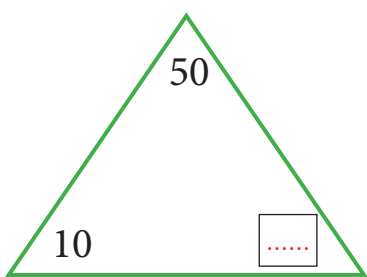
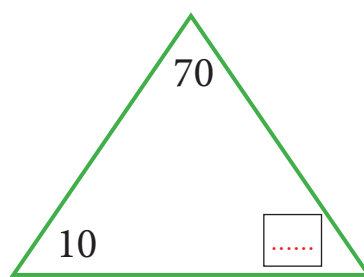
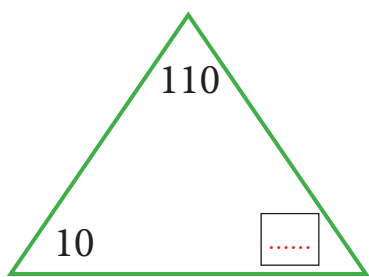
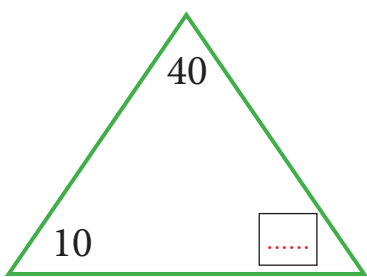
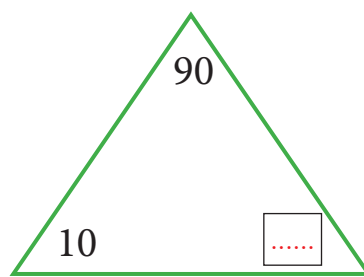
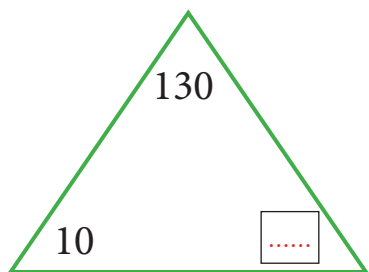
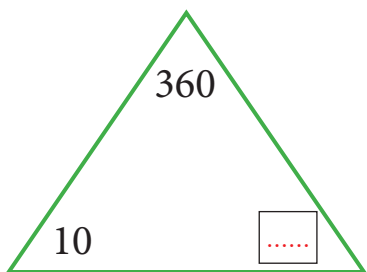
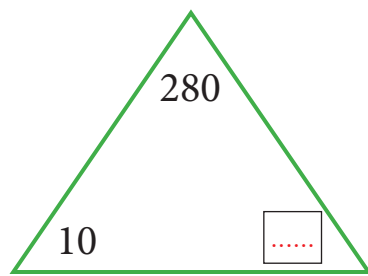
## Applying Patterns in Multiplication

Lesson

8

**Activity 1** Factorize each number into a factor pair using the number **10** as an **example** :

**EX**

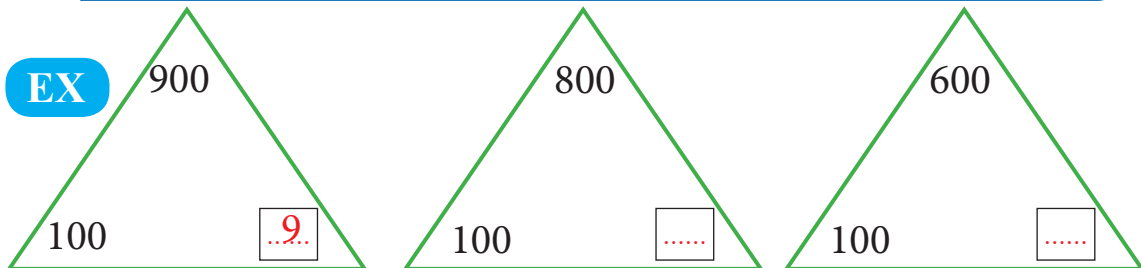
		
		
		

**Practice 1** Write the tens as in (a) :

- (a)  $30 = \underline{3} \times \underline{10} = \underline{3} \text{ tens}$
- (b)  $80 = \underline{\quad} \times \underline{\quad} = \underline{\quad} \text{ tens}$
- (c)  $160 = \underline{\quad} \times \underline{\quad} = \underline{\quad} \text{ tens}$
- (d)  $120 = \underline{\quad} \times \underline{\quad} = \underline{\quad} \text{ tens}$
- (e)  $170 = \underline{\quad} \times \underline{\quad} = \underline{\quad} \text{ tens}$
- (f)  $200 = \underline{\quad} \times \underline{\quad} = \underline{\quad} \text{ tens}$

## Unit 5

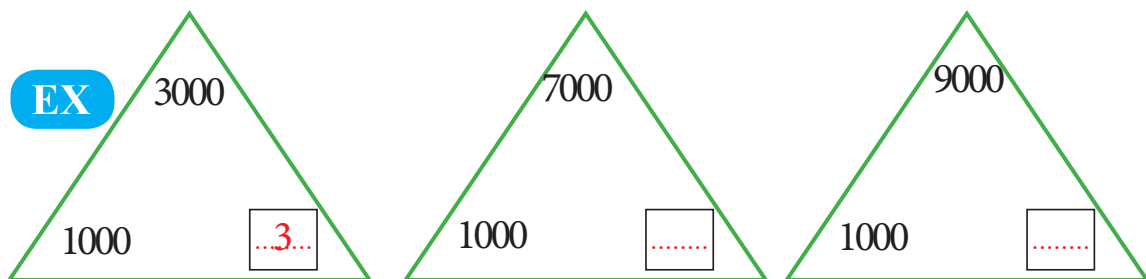
**Activity 2** Factorize each number into a factor pair using **100** as an **example** :



**Practice 2** Write the number of hundreds as in (a) :

- (a)  $600 = 6 \times 100 = 6$  hundreds
- (b)  $1300 = \dots \times 100 = \dots$  hundreds
- (c)  $2400 = \dots \times \dots = \dots$  hundreds
- (d)  $1000 = \dots \times 100 = \dots$  hundreds

**Activity 3** Factorize each number into a factor pair using **1000** as an **example** :



**Practice 3** Write the number of thousand as in (a) :

- (a)  $4000 = 4 \times 1000 = 4$  thousands
- (b)  $15000 = \dots \times \dots = \dots$  thousands
- (c)  $27000 = 27 \times \dots = \dots$  thousands
- (d)  $30000 = 30 \times \dots = \dots$  thousands



**Practice 4** Complete as in (a) :

(a)  $5 \times 30 = 5 \times ( 3 \times 10 ) = ( 5 \times 3 ) \times 10 = 15 \times 10 = 150$

(b)  $2 \times 60 = 2 \times ( \dots \times 10 ) = ( \dots \times \dots ) \times 10 = \dots \times 10 = \dots$

(c)  $6 \times 40 = 6 \times ( \dots \times 10 ) = ( \dots \times \dots ) \times 10 = \dots \times 10 = \dots$

(d)  $20 \times 7 = ( 10 \times \dots ) \times 7 = 10 \times ( \dots \times \dots ) = 10 \times \dots = \dots$

(e)  $30 \times 6 = ( 10 \times \dots ) \times 6 = 10 \times ( \dots \times \dots ) = 10 \times \dots = \dots$

**Practice 5** Complete as in (a) :

(a)  $300 \times 9 = ( 100 \times 3 ) \times 9 = 100 \times ( 3 \times 9 ) = 100 \times 27 = 2700$

(b)  $500 \times 7 = ( \dots \times 5 ) \times 7 = 100 \times ( \dots \times \dots ) = 100 \times 35 = \dots$

(c)  $400 \times 6 = ( 100 \times \dots ) \times 6 = 100 \times ( \dots \times 6 ) = 100 \times \dots = \dots$

(d)  $\dots \times 5 = ( 100 \times 7 ) \times \dots = 100 \times ( 7 \times \dots ) = 100 \times 35 = \dots$

(e)  $3 \times 800 = 3 \times ( 8 \times \dots ) = ( 3 \times \dots ) \times 100 = \dots \times 100 = \dots$

**Practice 6** Complete as in (a) :

(a)  $7 \times 2000 = ( 7 \times 2 ) \times 1000 = 14 \times 1000 = 14000$

(b)  $9 \times 4000 = ( \dots \times \dots ) \times 1000 = \dots \times 1000 = \dots$

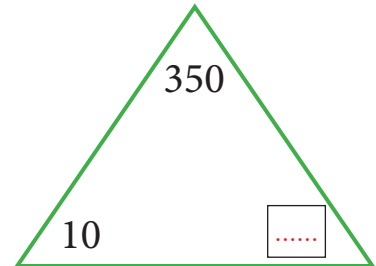
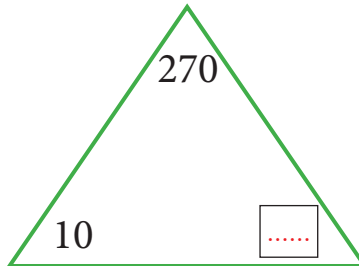
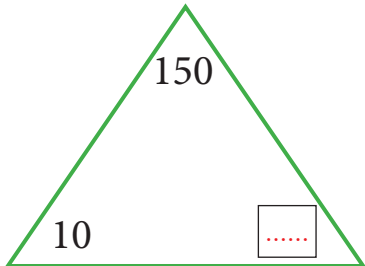
(c)  $5 \times 6000 = ( \dots \times \dots ) \times 1000 = \dots \times 1000 = \dots$

(d)  $1 \times 7000 = ( \dots \times \dots ) \times 1000 = \dots \times 1000 = \dots$

(e)  $3 \times 8000 = ( \dots \times \dots ) \times 1000 = \dots \times 1000 = \dots$

## Self - check on lesson ( 8 )

**1** Factorize each number into a factor pair using the number **10** :



**2** Write number of the tens :

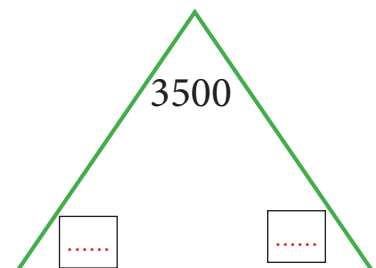
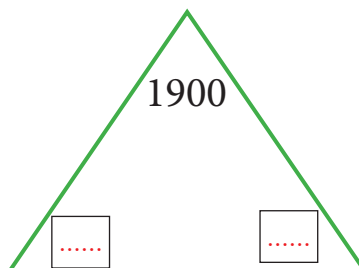
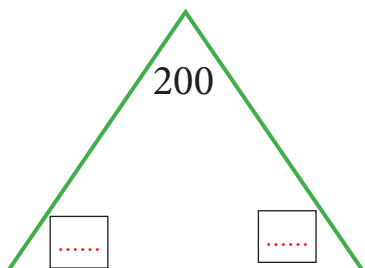
(a)  $260 = \dots \times \dots = \dots$  tens

(b)  $370 = \dots \times \dots = \dots$  tens

(c)  $150 = \dots \times \dots = \dots$  tens

(d)  $300 = \dots \times \dots = \dots$  tens

**3** Factorize each number into a factor pair using the number **100** :



**4** Write the number of hundred :

(a)  $1700 = \dots \times \dots = \dots$  hundreds

(b)  $3000 = \dots \times 100 = \dots$  hundreds

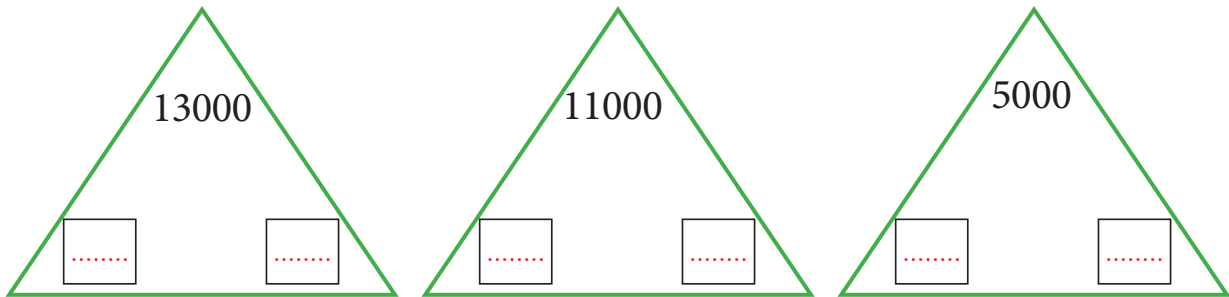
(c)  $4500 = \dots \times \dots = \dots$  hundreds

(d)  $3800 = \dots \times 100 = \dots$  hundreds

**Remember**

1 hundred = 100

**5** Factorize each number into a factor pair using **1000** :



**6** Write the number of thousand :

- (a)  $3000 = \dots \times 1000 = \dots$  thousands
- (b)  $12000 = \dots \times \dots = \dots$  thousands
- (c)  $56000 = \dots \times \dots = \dots$  thousands
- (d)  $75000 = \dots \times \dots = \dots$  thousands

**7** Complete the following :

- (a)  $5 \times 90 = 5 \times (\dots \times 10) = (\dots \times \dots) \times 10 = \dots$
- (b)  $500 \times 3 = (100 \times \dots) \times 3 = 100 \times (\dots \times \dots) = \dots$
- (c)  $80 \times 7 = (10 \times \dots) \times 7 = 10 \times (\dots \times \dots) = \dots$
- (d)  $30 \times 7 = (10 \times \dots) \times 7 = 10 \times (\dots \times \dots) = \dots$
- (e)  $\dots \times 6 = (\dots \times 7) \times 6 = 100 \times (\dots \times \dots) = 4200$
- (f)  $9 \times 2000 = (\dots \times \dots) \times 1000 = \dots \times 1000 = \dots$
- (g)  $300 \times 6 = (100 \times \dots) \times 6 = 100 \times (\dots \times 6) = \dots$
- (h)  $1 \times 4000 = (\dots \times \dots) \times 1000 = \dots \times 1000 = \dots$

# Enjoy math

## Parent's Guide

# Soon

**Ask about the second part**

**It contains :**

- ✿ **Explanation of the rest of the curriculum.**
- ✿ **Assessments on the curriculum.**
- ✿ **Complete answers to the book.**